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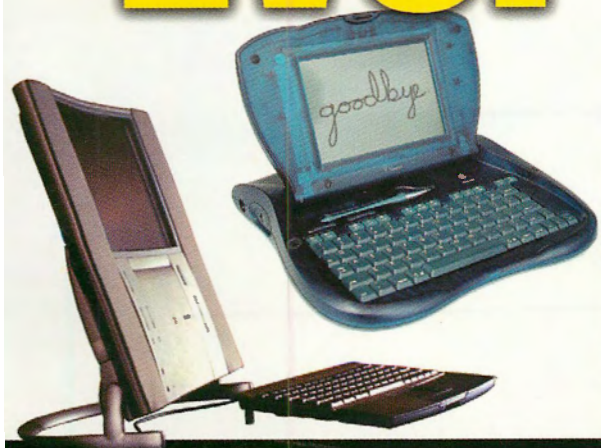
# MacAddict

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SEPTEMBER 2001 NO. 61

## The Best and Worst of Everything Mac

From the  
insanely great  
to the  
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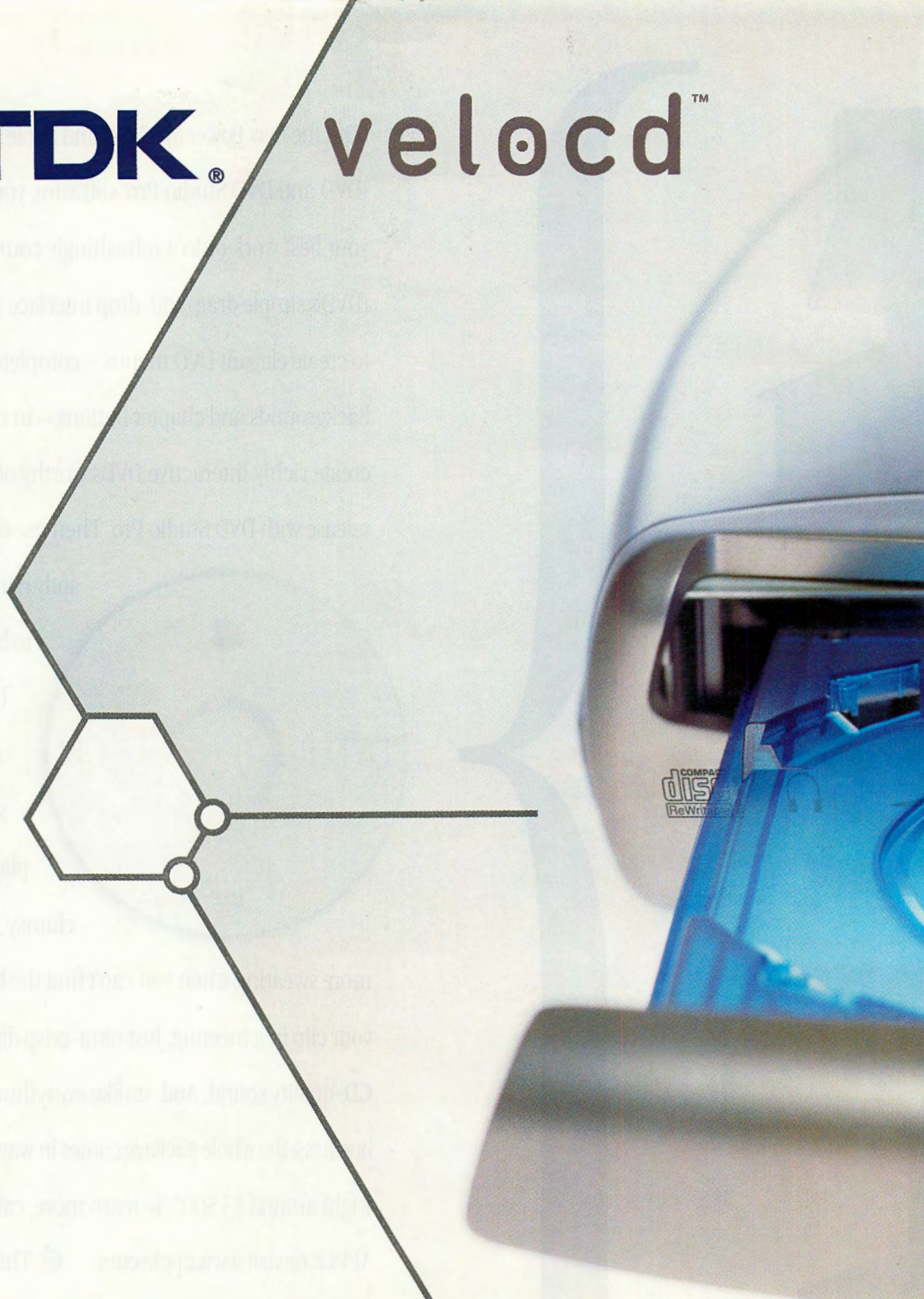
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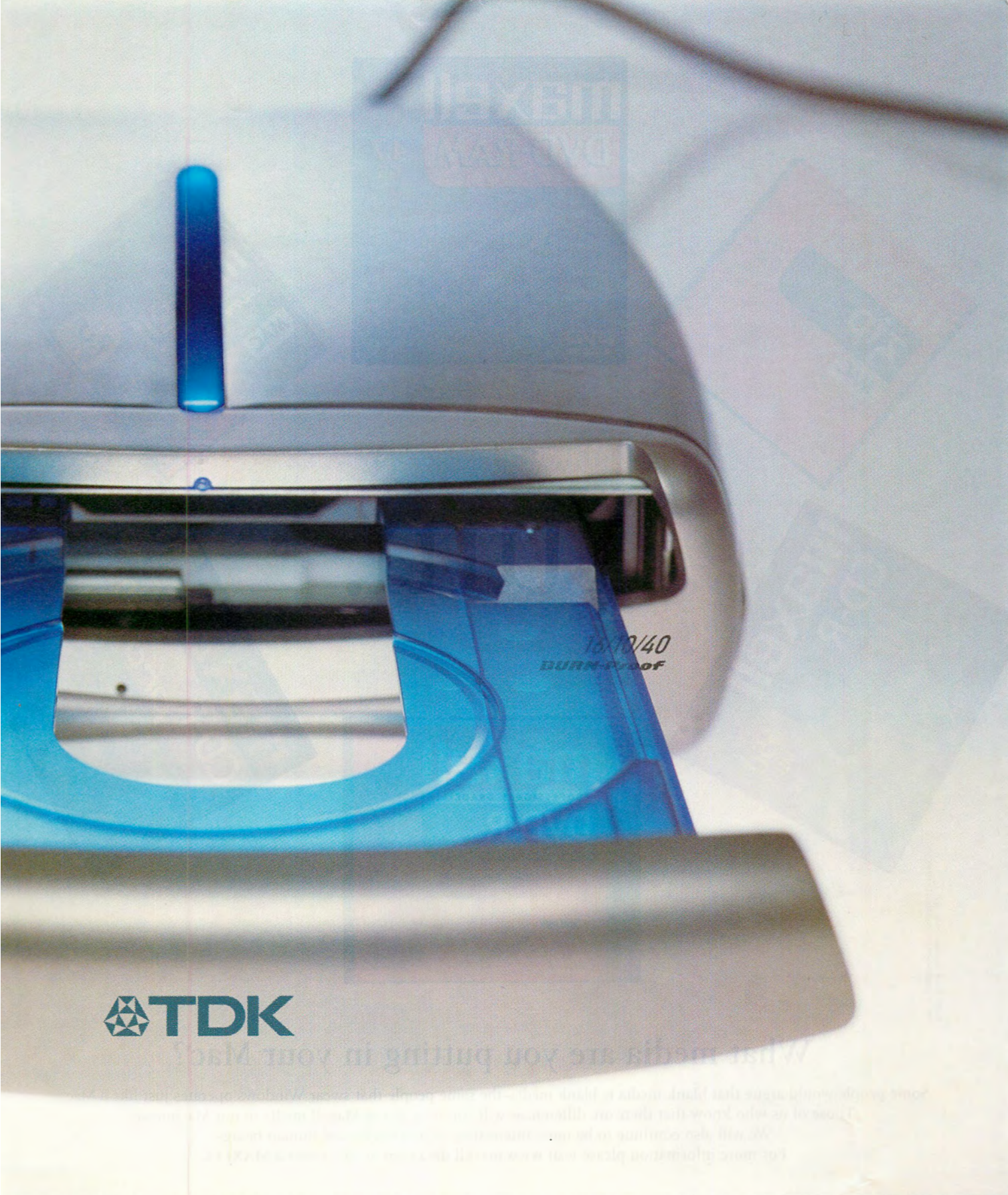
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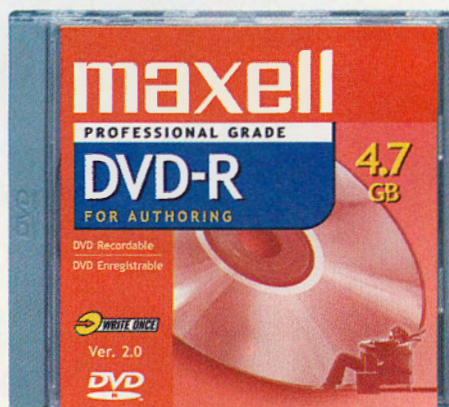
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THE MEDIA MATTERS



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# MacAddict

A better machine. A better magazine.

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More seconds before Air Rage Incident #392.



Come, sit by the Macintosh.

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### 30 20 QuickTime Tricks

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**by Steve Anzovin**



The ultimate in gender reassignment.

## how to



I am the Key Master!  
Bring me the Gate Keeper!

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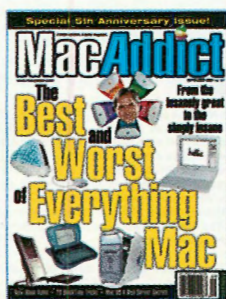
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It was better when there were only three Angels.



This month's cover was created by the fabulous Chris Imlay, Art Dictator.

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## every month

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Thank you, and good night.

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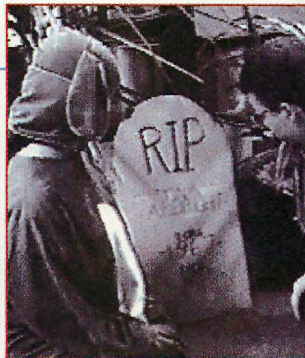
From cellular modems to freeze-frames, from ad banners to the OS X command line, we've got the answers you're looking for. If you want to change your startup chime, though, you're out of luck.

### 96 Shut Down

From your power supplies to our mouths, find out how *not* to troubleshoot a PCI card.



Hello, Mr. Bill! Nice to meetcha!



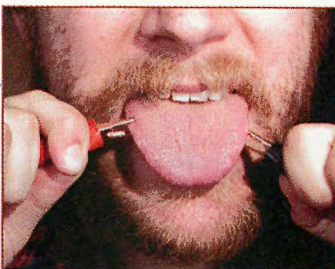
All dressed up and ready to mourn.



Magic Fingers—now with FireWire!



Heh, heh, nice doggie...



When tiny metal piranhas attack...

# MacAddict

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PUBLISHER Don Kimenker  
EDITOR IN CHIEF David Reynolds

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MANAGING EDITOR Jenifer Morgan  
SENIOR EDITORS Ian Sammis (technology),  
Narasu Rebbapragada (news), Cathy Lu (features)  
ASSOCIATE EDITOR Kris Fong (reviews)  
THE CD PERSON Andrew Tokuda  
WEBMONSTER Niko Coucouvanis  
CONTRIBUTING EDITORS Raf Anzovin, Steven Anzovin,  
Joseph O. Holmes, Buz Zoller  
LACKEY Skip Goat

#### ART

ART DIRECTOR Christopher Imlay  
ASSOCIATE ART DIRECTOR Leslie Brown

#### PRODUCTION

PRODUCTION DIRECTOR Richard Lesovey  
PRODUCTION COORDINATOR Hans Hunt

#### ADVERTISING

REGIONAL AD MANAGER Michelle Paredes  
SENIOR ACCOUNTS MANAGER, DIRECT SALES Ana Epstein  
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Bye, Dave!  
Enter the Art Cove! Rap-a-tap-tap,  
Thumper in the house!





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# editor's note

Goodnight, sweetheart, goodnight.

**"Y**ou're going to work at a new Macintosh magazine? Are you sure that's a good idea?"

This comment came from the managing editor of the newspaper I was working at when I gave my notice to come work for *MacAddict*. This was back in March 1996, just after Apple posted a large loss and was on the verge of posting another in April. Rumors were swirling about Apple's impending demise or its purchase by some other company (such as Sun). Leaving a comfortable job as an editor at a daily newspaper for a magazine launch—especially one covering the Macintosh—seemed like, well, a bad career move.

Turns out it was the best thing I've ever done in my work life.

Now, a little more than five years later, it's a whole different world. Thanks to some brilliant decisions, very hard work, and a lot of luck, Apple turned the corner and now sits in an enviable place. The company strung together a series of profitable quarters, even during a brutal downturn in the computer industry, and its hardware and software inspire competitors' knockoffs and catch-up attempts.

Despite Apple's highs and lows, *MacAddict* has bucked the tough-times trend over its five-year history. The magazine has grown and remained healthy during even the toughest of times. And I have a strong suspicion that after the tech sector rebounds, *MacAddict* is going to grow tremendously. Sadly, I'll have to watch from the sidelines, as I'm leaving *MacAddict* after this issue.

It was a hard decision to leave the magazine I helped launch, but a job opportunity came along that I couldn't refuse—at Apple. In the tradition of former *MacAddict* editor Kathy Tafel, I'm leaving for the mother ship. Although I won't be at *MacAddict* anymore, I've already lined up my three-year subscription.

Five years is a long time in this business; those years are filled with some great—and foolish—memories:

- Dressing up like Cheryl England for a staff video (for those who are interested, I make a particularly ugly woman).
- Countless brainstorming sessions, staff meetings, and lunches that deteriorated into low-brow humor.



## Gimme a big, sugary hug!

- Dragging a PC behind my truck through the *MacAddict* parking lot.
- Building a working remote-control rover equipped with video (the iBorg).
- Jägermeister (thanks, Cheryl!).
- Soldering a floppy header to an iMac motherboard without fear of retribution.

I'm leaving the magazine in the hands of the most talented, dedicated, hard-working staff with which I've ever had the pleasure of working. Next month, instead of the face of a grizzled stub, you'll see the lovely and talented Rik Myslewski, who has a decade of Mac magazine experience. Rik hails from the former *MacUser*, and he's going to do amazing things here.

Although I'm sad to leave the magazine and the staff, the thing I find hardest to leave behind is the *MacAddict* readership. Over the years, I've read thousands of email messages and hundreds of forum posts, and I've met a whole lot of you at various Macintosh events. Without exception, you've been a smart, witty, and enthusiastic group, and I want to thank you for your support. I don't know of another magazine that has better readers, and I have the numbers to back it up.

One final example before I sign off. Myles Allen sent us a statue of Max, our mascot. He sent it to us as a belated Christmas gift—not as a contest entry or as a way to schmooze a free issue, but rather as a token of his affection for the magazine. Talk about touching.

Thanks for reading. I can't think of a better way to spend five years of gainful employment. If you care to drop a line, write to me at dreynolds@springmail.com.

—David Reynolds

## Staff Rants



### Jenifer Morgan

#### Small-Game Trapper

**Q.** What's the longest you've held a job?

**A.** My time at *MacAddict* just beats out six summer seasons I spent working at a rustic mountain resort in the Sierras.

**Q.** What's the oddest job you've ever had?

**A.** It's a tie between "interim mousetrap setter" at said mountain resort during a most revolting mouse-plagued season and "finder of manicurist in the tenth hour for the women in Rosanne Barr's umpteenth wedding" as concierge at Caesars Tahoe.



### Ian Sammis

#### Rocket Scientist

**Q.** What's the longest you've held a job?

**A.** At the moment, that'd be about two years, here at *MacAddict*.

**Q.** What's the oddest job you've ever had?

**A.** Well, at one point I was working on installing a new computer at a telescope. Since I couldn't interfere with the observation schedule, I was about the only one happy when it started raining—while everyone else was glumly slinking back to the lodge, I'd be running out and getting started.



### Skip Goat

#### Bigfoot?

**Q.** What's the longest you've held a job?

**A.** Let's see...I'm officially going on two weeks here now...yep, this would be it!

**Q.** What's the oddest job you've ever had?

**A.** Hm...there've been so many. I wore a big, hairy suit with humongous feet and ran through a few heavily wooded areas across the States. I went diving in Scotland with a substantial rubber brontosaurus strapped to my back. And I let some magazine poke and prod my face for some stupid feature story.



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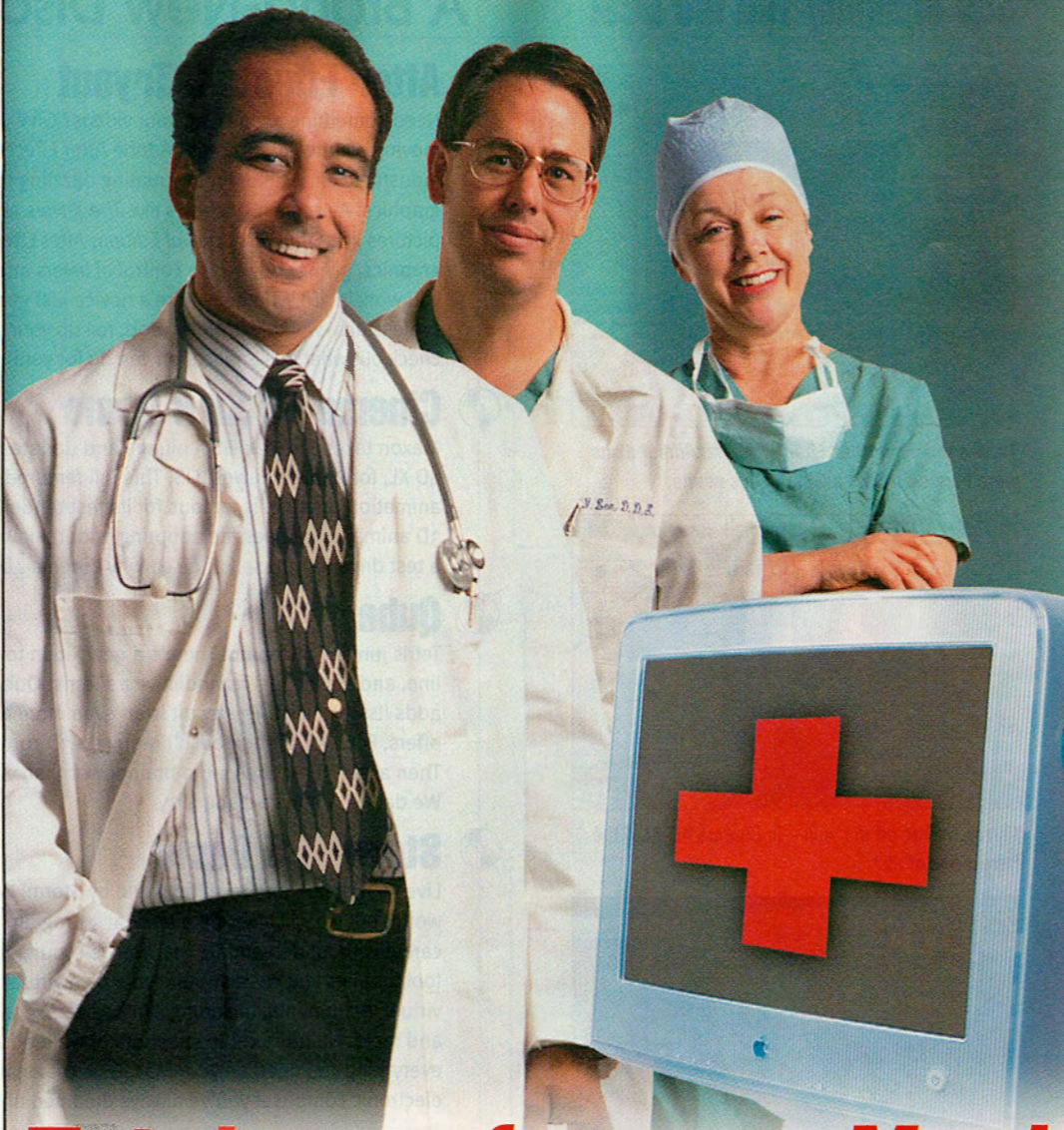
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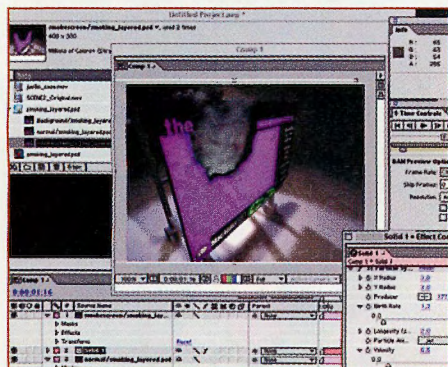
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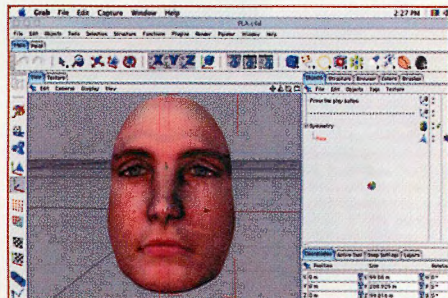




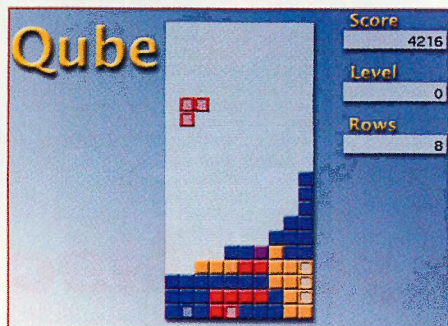
## Still Bringing You the Best



Thanks to Adobe After Effects, no *MacAddict* discs were harmed in the making of this movie.



Mirror, mirror, on the wall—is Cinema 4D XL 6 the fairest one of all?



All we are is just another brick in the wall...



I've got two turntables and a microphone.

## A Brand-New Disc



### After Effects 5 Tryout

Need something to spice up your videos? Give your moving pictures pizzazz with Adobe After Effects, the industry-leading program for creating dazzling full-motion graphics. As seen in TV shows like *The X-Files* and motion pictures like *Star Wars Special Edition*, After Effects lets you animate titles and graphics, giving you precise control of layers and splines—and now it even lets you work in 3D! Whether you're a novice just getting into digital video or a professional working in Hollywood, roll up your sleeves, install this tryout, and check out what this application can do for you!



### Cinema 4D XL 6 Demo

Maxon takes the Mac OS X plunge and updates its flagship 3D app, Cinema 4D XL, for Apple's newest OS. This full-featured, professional 3D-modeling and animation program is famous for its fast rendering engine—a good reason why 3D animation houses are adopting it for their work in broadcast television. Take a test drive for yourself and see why Cinema 4D XL is an industry fave.



### Qube

Tetris junkies, listen up! There's a new kid in town who's sure to reel you in hook, line, and sinker. Just as addictive as Tetris, Qube takes the guts of that game and adds its own twist. The result is an even more challenging puzzle than its rival offers. Fear not, Qube doesn't require a 3D card with all the bells and whistles. Then again, it requires more brainpower than your average first-person shooter. We dare you to give Qube a try.



### Storm 1.5 Demo

Live your dream and take the world by Storm! Well, we can't guarantee you the world, but we will give you a peek at a program that can further your music career without demanding that you sell your soul. Storm is a new music-creation tool that lets you custom-build your own virtual recording studio and fill it with virtual instruments, including synthesizers, drum machines, turntables, effects, and more. No more cable spaghetti or wallet-draining studio time—you have everything you need on your Mac. Give the demo a whirl and become the electronic composer you've always dreamed of being.



It's a sad day as Dave Reynolds leaves *MacAddict* and sets sail for Apple. See what *really* happened on the RMS *Maclanic* in our staff video, brought to you with that special *MacAddict* twist.

## Bonus!

Arrr! There's bonus treasure for you on The Disc each and every month. Max says, "Check it out!"

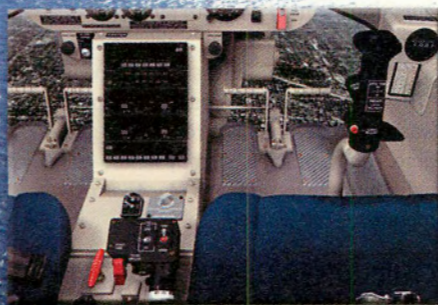
### This Month

September Nitrozac Comics and video, "Best of Mac Show Live Volume 3," and a Radius trailer with a slide-show commentary. Look for the free *MacAddict* fifth-anniversary DVD offer in this issue, where you can see these trailers and more in full-screen video!

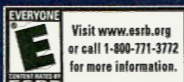




## The Thrilling Sequel to 1999's Flight Sim of the Year



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# letters

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## THANK IAN AND AIRPORT

I was so impressed with something you guys did last week that I wanted to write in and say thanks. It was the day of the special on-campus press conference at Apple, and like many other Mac users, I was hanging out in a chat room hoping someone might have some information. The Apple Store was down, all the Mac news sites were hard to pull up—nothing was happening. Then I stumbled across a note on As the Apple Turns ([www.astheappleturns.com](http://www.astheappleturns.com)) that said Ian Sammis would be reporting from the press announcement. I couldn't have clicked any faster to get there, and I wasn't disappointed. Thanks to Sammis and your crew for giving us the chance to sneak into the meeting with him. Keep it up, gang!  
—Andrew Duncan

## A REQUEST FOR TECHPLANATIONS

Thank you for the great magazine. I have a request, though. You sometimes refer to technical stuff without explaining it. I'm not a newcomer to the Macintosh, but a good deal of the jargon and technical mumbo jumbo you use goes over my head. If you're

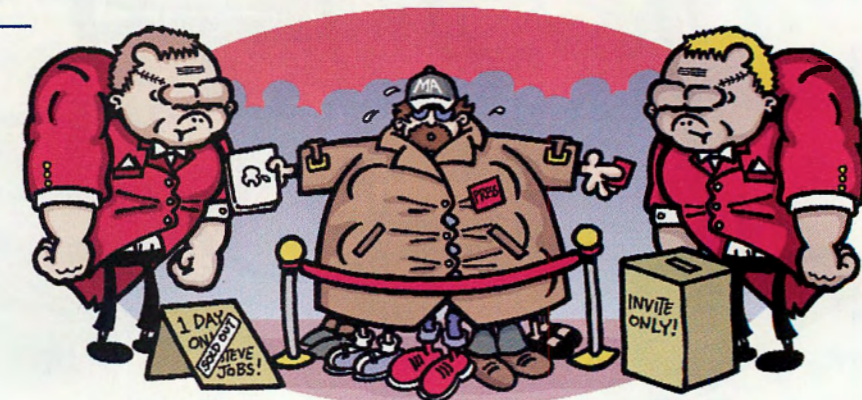


ILLUSTRATION BY DAVID ROSS

**So I've grown a few feet. You got somethin' to say about it?!**

haphazard or careless about using technical terms, you risk doing a lot of your readers a disservice.—Mike Bush  
*Sometimes it's hard to remember we need to provide some background for the tech stuff we talk about in our articles. We live and breathe it every day, and we need an outside perspective. Thanks for the reminder—we'll try to oblige.*—Ed.

## JUST THE FACTS, MA'AM

Wow, 500-foot-wide iMacs—I'm impressed (*Get Info*, Jul/01, p14). Earth is about 25,000 miles around the equator, so 20 times around is about 500,000 miles—and 5 million iMacs could fill that space only if they were 0.1 miles wide.—Tom Pittman  
*Upon rechecking the math, we found that 5 million iMacs would be more like 1,183 miles long, closer to the distance from New York City to Des Moines, Iowa. We're currently writing, "We will do more careful math from now on," 5 million times on a blackboard. We should be done in about 50,000,000 seconds, which equals approximately 13,889 hours, or about 1.6 years.*—Ed.

## MYSTERY SOLVED

Someone wrote to *Letters* asking who the girl in the Sherlock menu is (Feb/01, p10). I came across her photo in a stock photography catalog. Anyone can use it if they pay the royalty fee.  
—Leonardo Castro



**I'm available—for a price.**

## BETTER THAN SURVIVOR

"The Handspring Wilderness Handbook" (Jul/01, p41) was a great story. Having Jack Miller of As the Apple Turns keep a survival journal using PDA products was a stroke of genius. It was informative (I didn't know connecting to the Internet via a PDA was so easy and inexpensive) and highly amusing, which is why I subscribe to your magazine in the first place.—Jason Pierce

## MODULES TO SAVE A GEEK FROM THE GREAT OUTDOORS

Wow! What a great idea. Send a geek into the woods armed only with his wits and numerous battery-powered pieces of electronic equipment. On a cold day in winter. Voluntarily? At least the writing in "The Handspring Wilderness Handbook" was awesome. You need to hire this guy full time. Funny, probing, slightly weird—all the right things to look for in a *MacAddict* reporter. —Lee Wilmeth

## OUR OTHER CAR IS OBVIOUSLY NOT A PORSCHE

I read with great dismay your article on glTron (*Powerplay*, Jul/01, p65), which includes a picture of a light cycle with the caption, "My other light cycle is a Porsche." The automobile in question is a Porsche. Say it with me: Por-shuh! Two syllables! You have referred to it as a porch, more

## Recently Sighted



The George Foreman iMac Grill, as spotted at Big Bear Grocery in Wapakoneta, Ohio.  
—Brad Reed



My roommate and I went by the basketball courts one day and drew some snow art. Recognize the face?—Patrick Cummings



commonly found on the front or back of a house, a place for sipping lemonade. There is a big difference!—*Andy Cunningham*

## COVER LOVER

Hey, congratulations on putting together what I think is one of the spiffiest-looking *MacAddict* issues in a while. I loved the June issue's cover. It conveyed a simple yet clever concept, cleanly and elegantly executed—as OS X itself aspires to be. Thanks, guys, for a great issue all the way around.—*Chris Volpe*



## A VICTIM OF WORD COUNT

In Kris Fong's review of Formac's FireWire CD-RW drive (*Reviews*, Jul/01, p57), I agree with her disdain for the eject button on this drive. However, she did miss two design points its makers got right. One, the drive is whisper quiet. Two, it fits perfectly on top of a G4 Tower, and when the CD tray opens, it clears the G4's handle just right—something I don't believe any other FireWire drive does.—*Robert Tell*  
*We agree. We noted these two things in our unabridged review, as well as a third point—the drive's color meshes nicely with our G4's color scheme.*—Ed.



## Funny Feedback

Here's what you thought about our July 2001 cover feature, "Nitro-Burning Funny Macs" (p22).

### WE DON'T CALL HIM MADMACS FOR NOTHING

In your article "Nitro Burning Funny Macs," you show a picture of a painted MadMacs with a painted monitor (p32). I recently created my own Nitro Burning Funny Mac, and I painted it with a nice, glossy coat of candy-apple red. I would love to paint my monitor with a similar color; however, knowing that it's a CRT monitor with 10,000 volts of power, I remain wary. Would you let us in on your secret? I don't think you just happened to have a spare staff member or intern to ground the voltage so you could paint your Mac.—*Ton Phan*  
*Oh, wow—we should really have remembered the fly-back transformer, shouldn't we? No, we just blasted away with Krylon spray paint. In retrospect, it's a very good thing the monitor had been unplugged for many, many months before we painted it.*—Ed.

### FORM OVER FUNCTION?

The 12 pages on "Nitro Burning Funny Macs" is a complete waste of space. I doubt that 1 in 100 Mac owners wants to do anything like that or even read about it. Then 5 pages on "Vanity Macs" (p34) follow this article. Repeatedly, *MacAddict* is filled with material that wastes space or is above the head of the average user. I hope you understand what I am getting at! I am running out of Mac magazines that fit what I think are most users' needs.—*Phil Russell*

### WE'RE QUITE FOND OF ELSIE, TOO

I really loved reading your feature "Nitro-Burning Funny Macs," which is probably the best article you guys have ever done (since January 2001, anyway)! The Hot-Rod Elsie, iMacshall Road Rocker, and MITT are awesome. The other two kind of look like you were running out of time, but they are still pretty cool. Can I buy Hot-Rod Elsie from you?—*Chris Voelker*

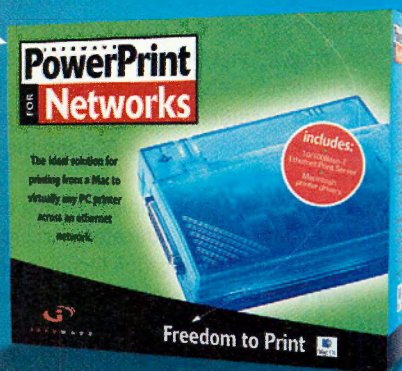
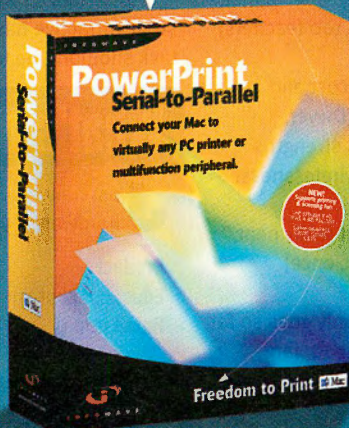
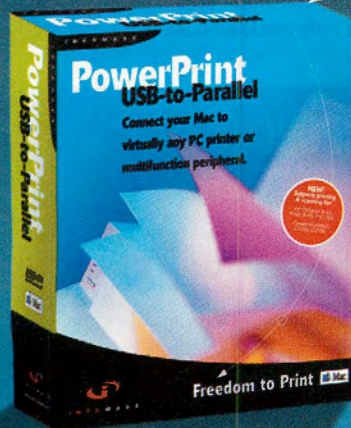
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# get info

An Apple a day keeps the Wintels away.

## Apple Goes Back to School

### Schools Still Prefer Macs

**A**long with the tiny tots and teenagers, Apple Computer is going back to school full force, trying to reassert itself as king of the educational hill. But with aggressive PC manufacturers seducing budget-conscious school districts with cheap hardware, what are Apple's chances? Things look good, actually. Easy-to-support hardware and a long history in education win Apple lots of gold stars at the K through 12 level.

Purchase price is not the only factor in the overall cost of a computer. "Look at the 3-year, 6-year, 9-year costs of owning the different kinds of machines," says Dave Moursund, former CEO of the International Society for Technology in Education ([www.iste.org](http://www.iste.org)). "My impression from talking to a lot of computer coordinators is that the Mac is a better buy."

This holds true even in low-income areas like the Pe Ell school district in Washington State, where 46 percent of the students are enrolled in free and reduced-cost lunch programs, according to the district's technology coordinator, David Dobbins. Of Pe Ell's 300 student and faculty computers, 225 are Macs. Dobbins says Macs are easy to use, troubleshoot, and repair. "I have a group of students who are trained for minor repairs on the computer," he says. "Unless it's a board-level repair, we do [repairs] right here."

Traditionally, teachers and kids have preferred the Macintosh's interface to the PC's. This is not surprising, considering that the mid to late eighties (back when schools were making their first purchasing decisions) were pre-Windows days. "In the late eighties, when we first developed our technology plan, we wanted to provide computers to teachers so they could be comfortable [with the technology]," says Debbie Branstetter, director of technology for Washington State's Northshore school district, which has 20,000 K through 12 students. "We gave teachers a choice between a Mac Classic and a 386; 15 chose PCs and the rest [of the 1,100 teachers] chose Macs."

Now, 15 years later, Apple is relying on more than cost and brand loyalty to entice educators. According to David Dwyer, Apple's director of education technologies, the Mac's strengths today are mobility (exemplified by the new iBooks), wirelessness, and ease of media use.

These strengths appeal to many teachers. "It's just really neat," Branstetter says. "Wherever [the students] do their [science] experiments, they can take their iBooks with them."

Still, Apple can't rest on its laurels. Brand loyalty only goes so far when schools need to stretch small budgets to provide for large



Looks like little Apple needs to do his price-comparison homework.

numbers of students. Even in Apple's own backyard of Santa Clara County, California, the district is purchasing more PCs than ever. The district used to be 85 percent Macintosh, but over the last few years, that statistic has slimmed down to 70 to 75 percent, according to Judy Powers, director of the Educational Technology Center at Santa Clara County's office of education.

The district is purchasing fewer Macs, Powers says: "Some [have] the opinion that if [the students] are going into the workplace, they'll be using PCs, not Macs."

Powers herself is a Mac fan, but while she says Apple's AirPort wireless networking is easier to use than PC wireless networking, the PCs are catching up—for example, she says, in metropolitan areas the Ricochet/PC solution works pretty well.

"Apple has to continue to make things easier, but it has to keep that cost competitive," she says, adding that PC vendors are also more aggressive, particularly because they are competing with Apple and with each other.

Apple has its work cut out in the education arena, but thanks to some attractive hardware and a firmly installed customer base, the task shouldn't be too tough.—NR

## What's the Difference?

**J**ust how much do you save on base-model hardware if you're in school?

| Product           | iBook   | iMac  | G4 Cube | Power Mac G4 |
|-------------------|---------|-------|---------|--------------|
| Educational price | \$1,249 | \$799 | \$1,169 | \$1,597      |
| Retail price      | \$1,299 | \$899 | \$1,299 | \$1,699      |

The Best and Worst of MacAddict

### Best and Worst Cover

**Best:** Break the Speed Limit (August 1999)

We caught your attention with this one. The cover had a great concept, great layout, and great color—that is, if you like those plastic construction cones.



**Worst:** Graphics (February 1998)

Pretty in pink? Not exactly. For an issue devoted to graphics, we could have improved on the artwork.





# X-It Interviews

A Heavy Hitter Talks About Porting Apps to X

**W**hy bring an app to Mac OS X and what's involved in the port? We didn't know, so we asked one of the biggest OS X software developers, Alias|Wavefront, about its OS X product.—NR

Alias|Wavefront

Maya for Mac OS X

Richard Kerris, former director of Maya Technologies

**MacAddict:** Why choose Mac OS X to enter the Mac market?

**What did Mac OS 9 lack?**

**Kerris:** The protected memory of Mac OS X was a key factor in bringing Maya to the Mac. Mac OS 9 is unprotected, which is unacceptable for our customers. [If an application crashes on Mac OS 9, you must reboot the system. In Mac OS X, you do not have to reboot.] The implementation of Open GL and the Unix core of OS X were equally important to us, as Maya started as a Unix application. Amazing customer demand was the biggest factor of all—[3D artists] want us on Mac OS X.

**MacAddict:** How is Maya different from other 3D programs like NewTek's Lightwave and Maxon Computer's Cinema 4D?

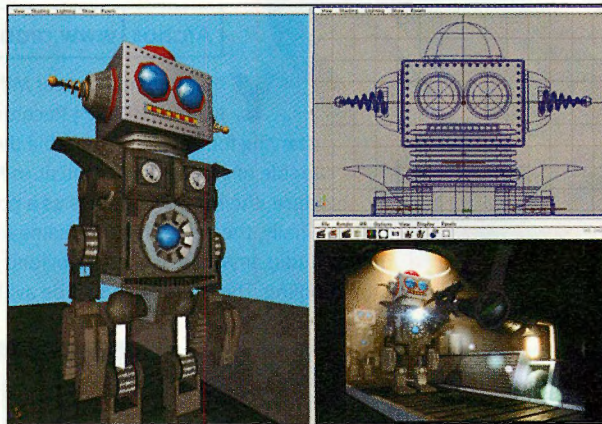
**Kerris:** Maya is a very deep package. Integrated Dynamics, Maya Paint Effects, and Interactive Rendering are some of the key differentiators. Plus, we have MEL (Maya Embedded Language) for scripting, which allows Maya to be custom configured for any type of workflow.

**MacAddict:** Does Maya work differently on the Mac than on Windows or Linux?

**Kerris:** Overall, Maya 3 is the same on the Mac as on any other platform; however, there are a few benefits for Mac users, the most notable of which is integrated QuickTime. This allows Maya to output directly to QuickTime or use QuickTime within the Scenes file. Other areas have been optimized for the Mac as well. For example, HotBox, which allows instant access to any feature within Maya, now features Mac-like tear-off windows.



A G4/733 with an ATI Radeon graphics card rendered this image in real time.



Maya's character-animation and rendering tools take this robot from day to night.

## Things That Go Bump on the Web

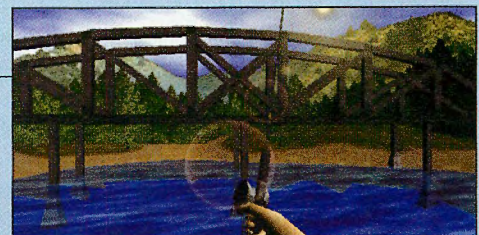
Macromedia and Intel (Yes, Intel) Bring You 3D Web Graphics

**W**eb graphics have come a long way, but they still look kind of flat, particularly when it comes to online games. Large file sizes and bandwidth requirements have prevented 3D graphics from hitting the Web in all but a few niche areas, which require generally Mac-unfriendly plug-ins to view.

Until now. In an unusual twist, a collaboration between Macromedia and Intel is bringing 3D Web graphics your way, and all you'll need to view them is the freely downloadable Shockwave Player 8.5.

3D graphics are encumbered with large file sizes because of the complex polygons used to create 3D models. Intel's Internet 3D graphics technology lets content creators send rough versions of 3D models, with limited polygon counts and correspondingly small file

Take me to the river!  
The online game Big Mouth Bass gets its 3D look from Shockwave.



sizes, over the Internet. Then Mac users use Shockwave to fill in the rest of the polygons to form the complete graphic.

"What the users see is very high resolution," said Miriam Geller, senior product manager for Director and Shockwave player. Geller said the primary targets for this technology would be merchandising, online learning, and, of course, games.

So the next time you see Lara Croft-style anatomy popping out at you over the Internet, you're not seeing double. It's just Shockwave at work.—NR

## Best and Worst Issue

**Best:** Secrets of the Mac Pros (August 2000)

In this issue, we gave you 23 pages' worth of insight from creative members of the Mac community, including design guru Roger Black, musician Moby, and poster artist Frank Kozik.



**Worst:** Ultimate Mac FAQ (April 1999)

We're not too proud to admit that we sucked once (but only that once). We went for form over function on this one. Some of the jokes sucked, too.





# droolworthy

Up-and-Coming Stuff We Can't Wait to Get Our Mitts On

## Ai3.2HD

Princeton Graphic Systems [www.princetonhdtv.com](http://www.princetonhdtv.com) \$3,499

**A**lthough your therapist keeps insisting that multiple personalities are a bad thing, some part of you (probably Eddie) thinks being flexible and adaptable is a good thing. And that's the case with the imaginatively named Princeton Ai3.2HD, a high-definition TV that doubles as a flat-screen computer monitor. Besides blasting out the sharpest picture available, the Ai3.2HD has Ch. 1 capabilities, which include Internet access, chat, and email, plus a channel guide and automatic-recording capabilities. Add to that a stylish infrared remote and keyboard, and you have something to make Eddie proud. You hope.—DR



Sure, the picture is crystal clear, but it's the remote that's cool—Batman would be jealous if he weren't filthy rich.



PHOTOGRAPH COURTESY OF PRINCETON GRAPHIC SYSTEMS

## Jukebox HD-MP3 Recorder and Player

Archos [www.archos.com](http://www.archos.com) \$349



With 6GB of space, the HD-MP3 doubles as a portable recording studio.

**Y**ou thought the great MP3 gadget race was over. Archos says not yet. With its new Jukebox HD-MP3 Recorder and Player, Archos gives us one more device worth starving for. This light, portable device features a 6GB hard drive and built-in MP3 player, capable of storing days of music in MP3 format. Through its internal hard drive and USB interface, the HD-MP3 doubles as a portable hard drive to store any kind of data, not just MP3 files. Finally, the device features a line-level audio-in port, which you can use to record high-quality audio anywhere you go—provided the device's 10 hours of battery life is enough for you. Stop drooling. The HD-MP3 should be available by the time you read this.—DR

PHOTOGRAPH COURTESY OF ARCHOS

## Goes to 11?

### What Happened to the Type 11 Error

**I**f you're an old-time Mac aficionado, you're certain to remember the familiar message "An error of Type 11 occurred." Type 11 errors were all-too-frequent crash inducers back when the first Power Macintosh debuted. Over the years, however, they have become less frequent, and now the dreaded data destroyer is a virtual no-show. What happened?

The reasons for Type 11's near extinction are simple. When Apple introduced the Power Mac in 1994, the company simply lumped together under Type 11 all errors that occurred in PowerPC-native code. It didn't matter what went wrong—everything was branded Type 11. Apple fixed this lack of discrimination when it released System 7.6.1 in 1997. The release of System 8.6 in early 2000 essentially solved the cause of Type 11 errors. Like smallpox and polio, Type 11 has virtually been eradicated, and its name no longer inspires terror. Ah, progress.—Rik Myslewski

## BOOKreview

Mac OS X: Visual QuickStart Guide  
by Maria Langer, Peachpit Press, \$18.99

**M**aria Langer's *Mac OS X: Visual QuickStart Guide* is a comprehensive, easy-to-follow, succinct guide to the latest Mac operating system. While it does not detail the major differences between the Old Testament (Mac OS 9) and the New Testament (Mac OS X), it explains how to work the basics—including the Finder, file management, printing, connecting to the Internet, using Sherlock, and setting system preferences. The book also includes information on running applications in OS X's Classic environment and how to use iTunes and iTools. One of the appendices even features a handy list of keyboard shortcuts to common menu commands.

Although you could figure out a lot of this information on your own through trial and error, this guide will certainly provide the little push you need to take the X plunge.—Whitney Hess



Mac neophytes, this is your bible.

The Best and Worst of MacAddict

### Best and Worst Mistake

**Best:** The Sims (October 2000)

In our review of Aspyr's *The Sims* (*Reviews*, p50), we inadvertently priced the game at \$2,495 (instead of \$49.95). Even our typos are larger than life.

CONTACT: 888-212-1111  
<http://www.aspyr.com>  
PRICE: \$2,495 (SRP)  
REQUIREMENTS: IBM G3 or G4, Mac OS 8.1

**Worst:** The Virus (December 1998)

We accidentally included a harmless variant of the AutoStart 9805 Worm on The Disc. We made clean discs available.





# In the Studio

## Steven Lovy Does Documentary Films in DV

**S**teven Lovy is a traditional film guy. He wrote, coproduced, and directed the science-fiction films *Circuitry Man* and *Circuitry Man 2*, and he's working on a television series for a major cable network. But when he went to Cuba and Thailand to shoot a couple of documentary films, he traded in a film camera for a MiniDV camcorder.

Why did Lovy go digital? "My preferred style of documentary filmmaking is to be as discreet as possible. Film cameras are big and clunky, but my MiniDV is so small that I can literally shoot from the hip," Lovy says. He also likes his camera's instant-playback feature and built-in CD-quality sound. Plus, he can do all the postproduction in his living room using Final Cut Pro on his Power Mac G4.

Lovy gave us some tips for filming and editing a documentary film à la DV. So read on, and maybe your next trip to the Galapagos will wind up at a film festival.—NR



PHOTOGRAPHY COURTESY OF STEVEN LOVY

If the invisible man had an audio system, this is what he would look like at work.

## Lovy's Studio

### Hardware

- Power Mac G4/500, Mac OS 9.1, 1GB RAM, 100GB free hard disk space
- Formac ProFormance 3 ([www.formac.com](http://www.formac.com), \$199.00)
- Hitachi CM715 19-inch monitor ([www.hitachi.com](http://www.hitachi.com), \$289.00)
- Sony Multiscan 17sf II 17-inch monitor (no longer new, \$119.00 on [www.futureusa.com](http://www.futureusa.com))
- Panasonic CT-20SX10 NTSC monitor ([www.panasonic.com](http://www.panasonic.com), \$399.95)
- LaCie U & I (FireWire and USB) CD-RW drive ([www.lacie.com](http://www.lacie.com), \$329.00)
- Epson Perfection 1200U flatbed scanner ([www.epson.com](http://www.epson.com), \$199.00)
- Canon ELURA2 camcorder ([www.canondv.com](http://www.canondv.com), \$930.00 street)

### Software

- Apple Final Cut Pro ([www.apple.com](http://www.apple.com), \$999)
- Apple QuickTime Pro Edition ([www.apple.com](http://www.apple.com), \$29.99)
- Adobe Photoshop ([www.adobe.com](http://www.adobe.com), \$609.00)
- Adobe After Effects ([www.adobe.com](http://www.adobe.com), \$649)
- Roxio Toast ([www.roxio.com](http://www.roxio.com), \$99.95)
- Alsoft DiskWarrior ([www.alsoft.com](http://www.alsoft.com), \$69.95)



Steven kicks out the video jams!

## Shooting Tips

### • Minimize the shakes

Lovy's spontaneous, impromptu filming style leaves little room for a tripod, so his movies include lots of handheld shots. To minimize the shakes, Lovy recommends shooting some footage while leaning against a post or wall. During editing, you can work these shots in with more-wobbly ones to give your audience's eyes a rest. Alternatively, adding a slow-motion effect to a shot smooths out the shakiness.

### • Stripe your tapes

Before starting your project, stripe your tapes. This is the process of adding time code, a digital code your camera and editing software use to identify each frame of your videotape. If you don't take this step and your battery dies while you're taping, there will be a blank area of tape (with no time code) between the old footage and the new stuff. This gap will prevent you from batch-capturing video in Final Cut Pro.

### • Record consistent sound

Set your camera for 16-bit, 48KHz sound quality. When you set up Final Cut Pro, tell it the KHz setting you want to use. If you import audio at different settings, Final Cut Pro will have to render the audio to make it the same, which slows down editing and creates audio-sync problems.

### • Log your footage

Log footage by writing down the tape number, the time code, and a description of your clips. When you're editing, you won't be constantly searching for scenes.

## Editing Tips

### • Hide crappy audio

Say your subject wanders away from your microphone's range. You can cover up dropouts in sound with *room tone*. Put your camera in a place that represents the room's background noise, record this sound, and add it as a separate audio track in your editing software. You can then raise or lower the level of the room tone to blend in with the dropped-out areas of your audio for better overall sound quality.

**• Use two drives—they're better than one**  
Maintain two drives—a startup drive and a separate scratch drive for your video and audio clips—for better system performance and organization. Besides, you'll have more storage, and since digital video has a voracious appetite for hard drive acreage, the more the merrier.

### • Save disk space

If you need only the video portion of your footage, disable the audio-import feature to save precious disk space.

### • Edit faster

In Final Cut Pro, edit your video using lower-quality image resolution. This will speed up your system. Once your project's done, you can re-render it at higher-quality resolution.

### • Defragment your drive

If you defragment your hard drive, your video will render more quickly, your system will run better and crash less often, and you'll free up more disk space.

## Best and Worst Prediction

### Best: Steve Jobs (January 1998)

In this issue (p30), we predicted Steve Jobs would save Apple, at a time when the fate of the company wasn't entirely clear. We're glad we were right.



### Worst: OpenDoc Rocks (September 1996)

It's hard to renege a title like "OpenDoc Rocks" (p36). We're ready to admit that the then-new, document-based software wasn't as revolutionary as we thought.





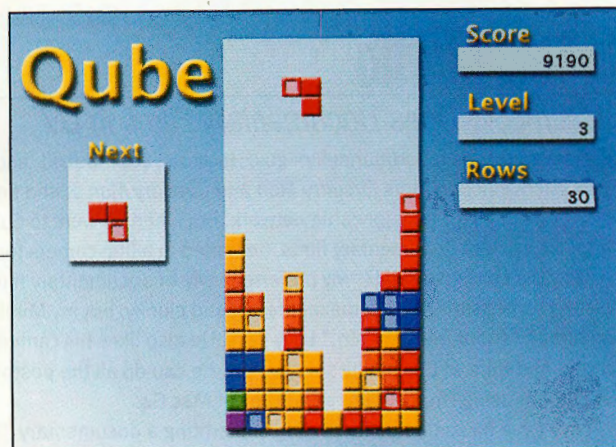
## Shareware Pick of the Month

Qube 1.0

PRICE: \$20 URL: [www.catarasw.com](http://www.catarasw.com)Find Qube  
1.0 on  
The Disc.

**Y**es, we know. There are already a million and one derivatives of Tetris out there. Despite all that, Qube is our shareware pick of the month because, as a Tetris takeoff, it hits the spot when your brain cells just don't want to function anymore.

As in Tetris, the object of Qube is to take irregularly shaped, multicolored puzzle pieces (made up of little cubes), position them, and drop them to the bottom of the screen. Positioned correctly, the individual cubes form continuous horizontal lines that disappear when complete. Incomplete lines pile up onscreen until you run out of room to play. Unlike Tetris's, some of Qube's cubes are transparent rather than solid, and the horizontal lines won't disappear unless you make the cubes solid all the way across. To turn a transparent cube solid, you must drop a second transparent cube onto it. Luckily, there are only two types of puzzle pieces, each



Let the pieces fall where they may. Well, they will if you don't take control of them.

consisting of three cubes. However, any number of those cubes (from none to all three) can be transparent. There are bonuses for clearing multiple rows and forming an entire row in one color.

Sure, Qube is no graphics stunner, but that's okay. Sometimes the no-frills games are the most fun to play.—CL

## TECHinfoTIDBITS Random Notes from the TIL

## When Your Applications Slow Down

**H**ave you been playing a game or working on a document solely with the keyboard? Has the app been slowing down to a crawl until you move your mouse, at which point it wakes right back up? Do you have an iMac or Power Mac G4?

If you answered yes to all these questions, the problem could be that your Mac's Allow Processor Cycling feature, nestled within the Energy Saver control panel, is turned on. Processor cycling, which switches your Mac to a reduced power mode when you're not using it, affects the performance of some games and apps. Adobe notes

that processor cycling slows down memory-intensive applications like Photoshop, and gamers have noticed that it causes jerky movement during gameplay.

To turn off this feature, go into the Energy Saver control panel and click the Advanced Settings button. Next, uncheck the Allow Processor Cycling box and then close the Energy Saver control panel's window.

Your apps should now work at normal speeds, whether or not you use the mouse.—NR

This month's caffeine boost was brought to you by Apple's Tech Info Library at <http://til.info.apple.com>

## Xtreme Contest Winners

## Congratulations—You're Smarter Than We Thought

In our May 2001 issue, we announced a contest challenging you to name the games where these three skaters appear.

720 degrees  
(Atari)Tony Hawk's Pro Skater  
2 (Aspyr Media)Mia 2: Romaine's New  
Hat (Kutoka Interactive)

We were sure we'd stump you, but judging by the number of correct answers that came pouring in, we were wrong. Congratulations to all you skating, shredding Mac addicts who submitted correct answers. And a special shout to our four randomly drawn winners.



PHOTOGRAPH COURTESY OF MARY FIUMARA

Winner of an  
autographed Tony Hawk  
skateboard

Gregory Fiumara  
Walkersville, Maryland

Winners of free copies of  
Tony Hawk's Pro Skater 2

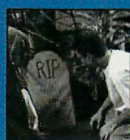
Morgan Sleeper  
Miami, Florida  
Joey Sanfilippo  
San Carlos, California  
Cutler Fritz  
(Winner at large)

The  
Best and  
Worst of  
MacAddict

## Best and Worst Staff Video

**Best:** *It's a Wonderful Mac* (February 1998)

We went with *It's a Wonderful Mac* on this Disc. Wade Albright stars as a Jimmy Stewart-style character, who glimpses a dismal hypothetical world without Macs.



**Worst:** *The "No Video" Video* (January 1998)

On this Disc, we announced on the staff video that there would be no staff video because we had to make room for the Myth demo. That was redundant.





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—Bubba  
IT Professional

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# scrapbook

It's all fun and games until somebody loses a drive.

## The Hard Facts on Hard Drives

by Narasu Rebbapragada

**W**hat actually goes on inside these mysterious, whirring boxes that you shouldn't dirty, shouldn't heat, shouldn't shock, and shouldn't jostle? Martin Parry, senior marketing manager at

Maxtor, fills us in on the inner workings of the company's internal ATA hard drives and explains how the commonsense rules for handling a hard drive actually protect its components.

### The Printed Circuit Board

The PCB is the nerve center of your drive. It contains the chips that control the motor, actuator, and firmware. The firmware is software code permanently loaded onto the disk drive to manage the drive's startup and shutdown, disk rotation, actuator movement, diagnostic features, and data. The PCB also contains buffer RAM. Very high temperatures are not good for the drive, so keep your Mac cool—below 131 degrees Fahrenheit (55 degrees Celsius)—and away from direct sunlight.

### The Disk Platter

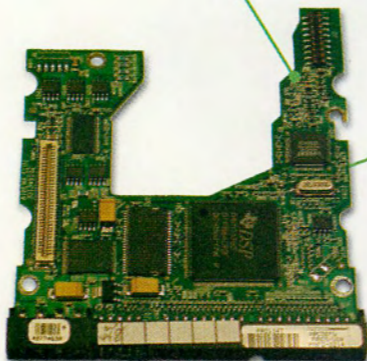
Made of an aluminum magnesium substrate with a magnetic layer, this two-sided disk platter holds 20GB of storage per side for a total 40GB capacity. To record data, the drive sends an electric current to the head (see "The Head," below), creating a magnetic field that aligns the disk's magnetic material to form the building blocks of binary data. The head writes data to the disk in tracks, spaced extremely close together—over 50,000 per inch. When a portion of the disk's surface becomes damaged, you've pretty much lost that area's data.



### Multiple Disks

A typical drive has one or two stacked disks, or platters, and up to four heads (one head on each side of the disk) for reading and writing data. The goal for a drive manufacturer is to pack in as much storage capacity per platter as possible to minimize the number of platters in a drive. The fewer components in a drive, the less can go wrong mechanically.

PHOTOGRAPHS COURTESY OF MAXTOR



Config

Power



### The Interface

This is a standard ATA interface. The four large pins on the right power the drive, the four pins in the middle identify and configure it, and the remaining pins on the left connect it to your Mac. Different pins serve different purposes. Your drive's manufacturer should have a diagram explaining what they are and what they do.

### The Actuator

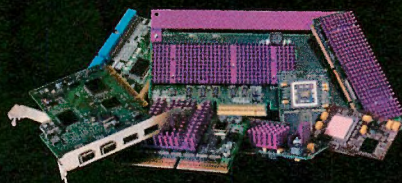
The actuator is akin to the arm on a record player. It allows the head to send (write) and receive (read) data to and from the disk platter to the PCB, which in turn processes the data on the drive. The head is a teeny-tiny chip on the actuator's tip, so small that you can't see it here. The orange band of wires attached to the set of pins is the flex circuit, which carries the data to and from the PCB.

### The Head

Perhaps the most delicate piece of your drive, the head reads and writes information to and from the drive. Heads fly 0.3 of a millionth of an inch above the surface of a spinning disk—the equivalent of a Boeing 747 flying 1/32 of an inch off the ground, according to Parry. Any jarring of the drive could cause the head to hit and potentially damage the disk. (Please don't drop it.) Properly shutting down your Mac causes the disk to spin down and the head to rest gently on a safe landing area. When you force-quit your Mac, you risk having the head fall on and damage a data-filled area of the disk. Heads are also very sensitive to electromagnetic charges, so ground yourself before touching a drive. Plus even small amounts of contaminants (dust, dirt, and so forth) can render a disk's head useless, so never open up your disk drive!



# Unless you're the Lead Dog, the view never changes!



Put your competition behind you—install Sonnet Macintosh enhancement products to make your computer feel like new. Our G3 and G4 Crescendo™ and Encore™ processor upgrades accelerate your legacy Power Macintosh to the limit, and our Tempo™ Ultra ATA66 and Tango™ FireWire®/USB PCI adapters enable you to widen the connectivity lead. Be the lead dog.

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# The Best and Worst of EVERY

## History

Since its inception, Apple's history has presented object lesson after object lesson on a variety of topics—ranging from how *not* to handle manufacturing computers for the holiday season to how to save a company from bankruptcy.

### Best Rumor: Apple set to buy Be Inc.

Back in 1997, with Apple on the brink of collapse and the Copland project hopelessly stalled (this was the intended revamp of the Mac operating system before Apple started the Mac OS X project), rumors swirled that Apple might buy Be Inc., a small computer company founded by former Apple-ite Jean-Louis Gassée. The rumors sounded too fantastic to be true, and they were—instead, Apple bought NeXT (founded by former Apple-ite Steve Jobs).



Be Inc. came in second in the "acquired by Apple" race.

### Worst Rumor: [Insert company here] set to buy Apple.

During the Troubles of 1996–97 (when Apple lost more than a billion dollars in a one-year period), rumors circulated that a bigger fish—Sony, Sun, or Disney—might snatch up the company in a fire sale. While purchase rumors like these often have a grain of truth at their core, this series was more of the FUD variety—that's Fear, Uncertainty, and Doubt.



Last year, Disney—this year, AOL Time Warner?



# Your Guide to What Sailed and What Failed in the Macintosh World

**D**espite pleas to the contrary from Sunday-school teachers and certain New Testament authors, humans are a judgmental species. But rather than cursing our inability (or unwillingness) to take things at face value, we decided to celebrate our own foibles by passing judgment on everything in the Mac world—ourselves included.

This feature is also a celebration of our five years in print, watching the Macintosh industry change and grow. Although we tried to cover the works in this article, we concentrated on Apple history, Mac pop culture, and industry luminaries—the people and topics we don't talk about on a regular basis. A lot of good, bad, and ugly has gone by in that time—and you'll read all about it in the next six pages.

So here are our choices for the best and worst of everything Mac and Apple related—best rumor, worst business mistake, best slogan, worst Expo speech. You get the idea. If you want to see what we thought of some of our *own* great ideas, look at the ticker in this issue's *Get Info* section (p14). Hey, even we can't be perfect all the time.

By David Reynolds (with help from the *MacAddict* staff)

# THING Mac

## Best Product Code Name: **Carl Sagan.**

We didn't choose Carl Sagan because of his scintillating personality, but because he threatened legal action to keep Apple from using his moniker as the code name for the Power Macintosh 7100. Apple employees promptly responded by changing the name to BHA, for Butt-Head Astronomer. This second name resulted in a libel suit, which Sagan didn't win.



Funny—looks like a regular head...

## Worst Product Code Name: **Spartacus.**

It's not that the name was so bad—the 20th Anniversary Macintosh simply didn't live up to the name's promise. A pity.

## Best Expo Moment: **Introduction of the multicolored iMacs.**

At the San Francisco Macworld Expo keynote in January 1999, Apple introduced iMacs in five colors: Blueberry, Strawberry, Tangerine, Grape, and Lime (after months of rumors and prodding by the Mac community). Unfortunately, one of Apple's worst business decisions followed this move—forcing resellers to buy iMacs in packs of five different colors, rather than allowing them to buy specific colors according to demand.



Code name: Lifesavers. Actual name: jaw-droppers.



# Best Apple Ideas

Apple employees have had some tremendously brilliant ideas over the years. Here's our look at the best ones.

**QuickTime:** By providing a wrapper for all kinds of media, Apple's QuickTime can handle just about any kind of audio, video, or still image you throw at it—more than any other competing technology.

**The best multimedia-wrapper technology ever—and Apple invented it.**



**Bringing Steve Jobs Back:** He saved the company, after all.

**FireWire:** FireWire is the interface of choice for digital video, external hard drives, and CD-RW—plus it will be twice as fast when the next specification arrives on the motherboard.



This little port is the key to big cutting-edge technology.

**iMac:** Bucking conventional wisdom that a computer shouldn't be cute, the iMac was Apple's first runaway success in many years.

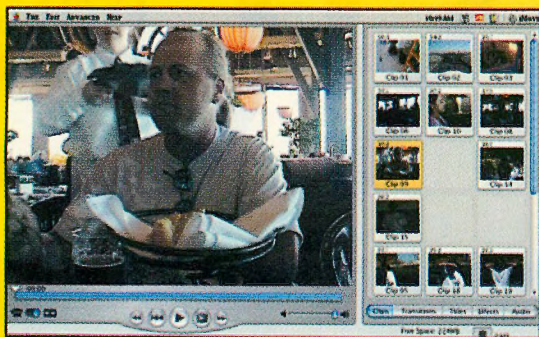


Small case, big impact.

**iBook:** The successor to the Newton-based eMate, the iBook is the laptop for everyone who ever wanted a laptop but couldn't afford one.

**GUI:** OK, so the GUI (graphical user interface) wasn't Apple's idea, but the company has made the best version of it by far.

**iMovie:** According to the folks at Microsoft, even Bill Gates thinks iMovie is brilliant—so it *must* be.



Desktop video—how innovative!

**One-Button Mouse:** The concept of making a GUI simple enough to manipulate with a single button amazed the world.

A single button revolutionized the GUI.

**AppleScript:** An easy way to automate systemwide tasks, AppleScript has saved savvy users thousands of hours of labor.

**G4 Tower Case:** Simple and elegant, this design makes upgrading a G4 a breeze.

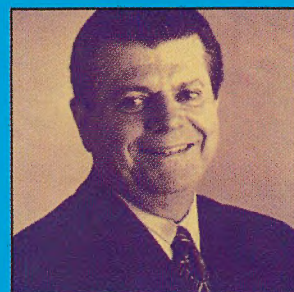
Easy open, easy upgrade—no more blood sacrifices required to install RAM.



# More History

## Worst Expo Moment: Gil Amelio's final keynote speech.

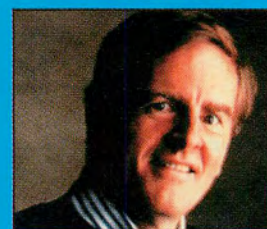
At the January 1997 Macworld Expo, Gil Amelio rambled on for more than two hours without apparent focus, calling several celebrities (such as Muhammad Ali) onstage to promote various projects and lend Apple a sheen of fame. Truly a painful experience for all those who attended.



Long speech, short career.

## Best Attempted Boardroom Coup: Steve Jobs's assault on John Sculley.

In 1985, while then-CEO John Sculley was in China, Steve Jobs organized a coup to try to force Sculley out. Tipped off, Sculley won the executive showdown and stripped Jobs of nearly all of his powers and responsibilities. Jobs resigned from Apple to start NeXT.



John Sculley sidestepped a boardroom coup.

## Best Near Boardroom Coup: Gil Amelio's resignation in July 1997.

One can guess that Amelio saw the writing on the wall and resigned before the situation ever reached the board. By this time, it had become painfully clear that Jobs, not Amelio, was in charge. Thank god.

## Best Period in Apple History: 1998–2001.

After surviving billion-dollar losses, shrinking revenues and market share, and the lackluster leadership of the Gil Amelio–Michael Spindler era, Apple reinvented itself as one of the coolest consumer-electronics companies around, showing profits even in the toughest market conditions.

## Worst Period in Apple History: 1995–97.

Between Amelio and Spindler, Apple managed to transform itself from stylish computer maker to high-tech laughingstock. If you were an Apple enthusiast during this time and you stuck with the platform, consider yourself a grizzled veteran—and award yourself a Grape Heart. **Runner-Up:** 1985. After the original introduction of the Macintosh, a dearth of applications threatened the platform—that is, until PageMaker arrived on the scene and ensured the Mac's success for the next ten years.

## Best April Fools' Day Joke That Wasn't a Joke: MacCharlie.

This hardware peripheral from Dayna appeared in 1985 and gave the Macs of the day the ability to run IBM-compatible software. It was essentially a PC grafted onto the side of a Macintosh, with its own CPU and drives. When *Byte* wrote about the MacCharlie, many thought the article was one of the magazine's practical jokes.



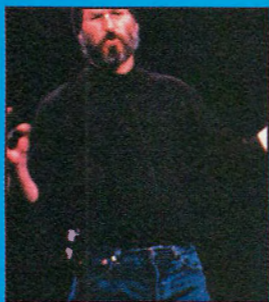
# Steve Jobs

Like him or not, Steve Jobs is the single most influential person in the Macintosh community—so we thought it only fitting to put out the best and worst about The Man.

## Best Outfit: Black mock turtleneck and blue jeans.

This casual ensemble is disarming in its simplicity and lack of formality, belying the power of the man who wears it.

Understated fashion—  
always in style.



## Worst Outfit: Bow tie and suspenders.

In a picture with then-CEO John Sculley, Jobs sported an outfit that made him look more like a young Orville Redenbacher than a tech visionary.

No, it's not a circus act;  
it's an attempted  
fashion statement.



## Best purchase: Pixar.

Jobs bought the animation company from George Lucas for under \$10 million. Jobs is the head of Pixar as well as of Apple.

**P X A R**  
\$10 million for a controlling  
interest? A bargain.

## Best Gift: Gulfstream V personal jet.

Apple bought this little gift for Jobs out of sheer gratitude after he saved the company's bacon.



The gift that inspired drooling  
in pilots all over the world.

## Best Quote: "Do you want to sell sugar water to kids all your life, or do you want to have a chance to change the world?"

Steve Jobs said this to John Sculley when he tried to get Sculley to come to Apple from Pepsi. Different people have munged this quote over the years. One variation goes: "If you stay at Pepsi, five years from now all you'll have accomplished is selling a lot more sugar water to kids. If you come to Apple, you can change the world." **Runner-Up:** "You're fired."

# Best Technology That Died

Apple is nothing if not innovative, having contributed more to computing than just about any other company. But the road of innovation is littered with the carcasses of dead technologies—and while some of them deserved to die, others showed promise. They either came along at the wrong time, had the wrong case, or suffered from some other flaw that kept them from maturing and standing alone as productive members of Macintosh society.

**eMate:** While some pooh-pooed this iBook forerunner (based on the Newton OS) as essentially useless, it did have a few redeeming qualities not found in any other laptop: a 10-hour battery life, instant startup, unbelievable ruggedness, and industrial design beyond its years. Unfortunately, it was only available to those in the education market.



Color clamshell with a handle—  
hmm. There's an idea.

**Newton:** The eMate's older brother, the Newton was the first PDA to hit the market, long before the Palm or Visor came on the scene. Sadly, the Newton's laughable handwriting recognition and huge case doomed it—the device became an interesting side note to Apple history.

Unfortunately, the Newton was nearly the  
size of a baby dolphin.



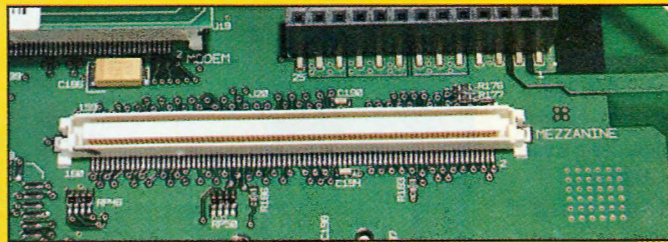
**OpenDoc:** Sure, we touted it as the technology that would change how you worked with your Mac (back in our premiere issue). Well, we were wrong. OpenDoc—a technology that made the document, not the application, the center of attention—proved to be hugely problematic for programmers and users alike.

**CyberDog:** You can't talk about OpenDoc without mentioning CyberDog, Apple's attempt at a Web browser. You could put this little pooch of an app in any OpenDoc document, in effect embedding a Web browser. CyberDog had some amazing capabilities, but its close ties to OpenDoc doomed it.



The cutest dog Apple  
ever put to sleep.

**Mezzanine Slot:** Originally intended as a testing device, the Mezzanine slot in early iMacs gave users a way to add amazing powers, such as SCSI or a Voodoo video card. Apple deemed the slot "unsupported" and removed it, leaving the iMac with zero expansion options.



This small slot—  
the key to iMac  
expandability—  
disappeared in  
later revisions.

**Apple Data Detector:** Implemented as an extension to the Mac OS, this bit of technology picked URLs and email addresses out of selected text—pretty nifty stuff. Until it died, anyway.

**eWorld:** Launched in 1994 and folded in 1996, eWorld was Apple's attempt at an online service similar to AOL. Today's score: AOL, 30 million; eWorld, 0.

Although eWorld is long dead, its  
fans keep it alive with tributes  
such as this desktop pattern.





# Worst Design Decisions

Apple is famous for its innovative hardware designs, but let's not forget that the company has made quite a few mistakes along the way.

## Reducing the Number of PCI Slots:

Apple cut the PCI slots from six to three when it released the original G3. Despite the addition of a fourth PCI slot in the latest G4 model (which debuted last January), that is simply not enough slots for audio and video aficionados—which leaves them using outdated Power Mac 8600s and 9600s.

## Flower Power and Blue Dalmation:

Unlike Lime, these patterns don't look better in person.



Don't adjust your monitor—this is how these Macs actually look.



**Ditching the Audio-in Port:** Until the debut of the original iBook in July 1999, every Mac on the market had a decent analog audio-in port. The latest round of Macs relies on USB to bring audio in, making it tough to do quick-and-dirty audio work. In fact, the only audio inputs on current Mac models are the built-in mics on the PowerBook G4 and iMac.

**Apple Display Connector:** The Apple Display Connector, introduced in the summer of 2000, provides a single cable for the DV signal, USB, and monitor power. Sure, it's nice to have all those functions on a single cable, but it requires a custom connector—the ADC. You can get a third-party adapter, but that means spending more of your hard-earned scratch.



A single custom connector for video, USB, and power—innovative but annoying.

# Business

Despite some beliefs to the contrary, Apple is a business—one with a rich history full of great gaffes and sweet successes.

## Best Amelio-Era Employee to Keep His Job after Jobs Took Over: Fred Anderson.

This fiscal wizard has seen Apple through some tough times while helping to keep the company profitable and stockpiling an impressive amount of cash: \$4.1 billion, at last count. That's enough to buy a fleet of about 90 F-117A stealth fighters.



The man behind the money miracles—Fred Anderson.

## Best Amelio-Era Employee to Lose Her Job after Jobs Took Over: Ellen Hancock.

When Apple engineers got mired in trying to make the doomed Copland project work, Hancock had the guts to kill it, putting Apple on track to produce Mac OS X. Hancock is currently chairwoman and CEO of Exodus Communications, an Internet services and hosting company.



Ellen Hancock had the guts to kill Copland.

## Best Legal Agreement: Apple Computer and Apple Corps (the Beatles' record company).

The two companies agreed in November 1981 to allow Apple Computer to use the Apple name for its products. In 1989, Apple Corps sued Apple Computer for making equipment capable of recording music, an apparent violation of their original agreement. Rumor has it the MIDI-management tools were the offending bits of software. How ironic—they sucked.

## Worst Legal Agreement: Apple's licensing of certain technologies to Microsoft in 1985.

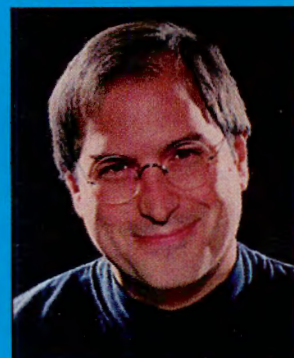
This pact allowed Microsoft to use icons and windows in Windows 1.0 in exchange for agreeing to develop Mac software. Unfortunately, the agreement undermined Apple's 1988 copyright-infringement lawsuit against Microsoft and Hewlett-Packard for copying the Macintosh GUI in Windows 2.03 and New Wave, respectively. Apple did not prevail, sadly—and now we have Windows XP.

A legal agreement with Microsoft weakened Apple's subsequent lawsuit.



## Best CEO: Steve Jobs.

Yeah, this one is a no-brainer, but it deserves saying. Jobs and his entourage of former NeXT-ites managed to pull Apple out of its death spiral and give it a sense of purpose and style. Thanks to them, it's a great time to be a Mac user.



The man behind the comeback.

## Worst CEO: Michael Spindler.

You might think we'd pick Gil Amelio, but he did do a few things to put Apple back on track, such as hiring great executives like Fred Anderson and Ellen Hancock. Spindler had a term of three years—one year longer than Amelio, who replaced Spindler in 1996. The Spindler era is a poster child for poor decision-making. During this time, Apple licensed the Mac OS, which cannibalized the company's profits without increasing its market share (see "Worst Strategic Flubs," next page). Meanwhile, the company couldn't build enough Macs due to parts shortages, creating a huge backlog of unfilled orders. On top of that, Windows 95 debuted in August 1995, posing a challenge to the Mac's GUI. (Yeah, we know Windows 95 sucked, but it was good enough for lots of folks.) Setting up problems to come, Apple pushed the low-cost, low-performance Performas over higher-margin models, resulting in a loss for Apple—the first in a string of many unprofitable quarters (see "Worst Business Blunder," next page).

## Best Financial Announcement: Steve Jobs's January 1998 Expo announcement.

During the January 1998 Macworld Expo keynote in San Francisco, Jobs announced that Apple would show a surprise \$45 million profit—the first of many money-making quarters he would oversee.

## Worst Financial Announcement: Gil Amelio's \$120 million loss announcement.

Apple's \$120 million loss in the first quarter of 1997 came on the heels of a \$25 million profit in the last quarter of 1996. Some analysts believed Apple cooked the books to show a small profit so Amelio's bonus plan would kick in.

**Runner-Up:** The loss of \$708 million in the second quarter of 1997.



## Best Business Move: Ending the Mac OS licensing program and the era of the clones.

Through the initial deal, companies like Umax and Power Computing could license the Mac OS and certain motherboard designs from Apple, but were free to build their own hardware and tweak the designs. When Jobs decided to pull the plug on licensing in the fall of 1998, pundits and enthusiasts alike thought the end of the Mac was near. In reality, the decision bolstered Apple's profits and gave the company greater control over the Macintosh's technology and style—something it lacked as long as third-party manufacturers could build cheap beige cases at insignificant profit margins.



The ill-fated Mac OS licensing program produced a series of non-Apple Macs such as this one from Power Computing.

## Most Visionary Decision: The iMac.

Greeted with disbelief over its low price, innovative case design, and elimination of the floppy, the iMac was the first product in Apple's comeback drive of the late nineties, providing a model for PC makers to copy—mostly unsuccessfully. The iMac had the right combination of style, innovation (including USB), and price to turn into a runaway success.



This little machine did a lot to get Apple back on track.

## Worst Business Blunder: The great Performa ramp-up of 1995.

In a move that baffled some, Apple, under CEO Michael Spindler, concentrated on low-margin Performas instead of the more powerful and more profitable Power Macs. The result—a \$68 million loss.

**Runner-Up:** Apple's failure to license the Mac OS in the mid-eighties. While it's not a foregone conclusion that licensing the Mac OS back then would have put Apple in Microsoft's position now, it's interesting to think about what might have been if the Mac OS—not DOS or Windows—had become the de facto operating system for the world's computers.

## Best Marketing Campaign: Power Computing's "Fight Back for the Mac" campaign.

Back in the dark days when Mac enthusiasts had to endure one doom-and-gloom story after another, Macintosh clone maker Power Computing put together a campaign of print ads, posters, and other messages urging users to fight for their platform of choice. The edgy, original ads managed to provoke a lawsuit over the use of a Sluggo-like character. They also included the phrase "Let's Kick Intel's Ass," which Power Computing later changed to soften the campaign.

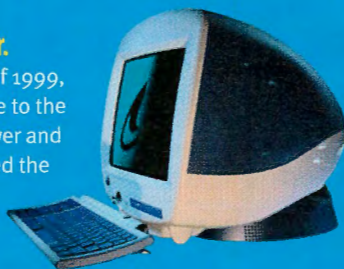


This poster prompted a lawsuit over copyright infringement.

## Worst iMac Ripoff: Future Power's E-power.

This all-in-one computer, introduced in the summer of 1999, came in five colors and bore an uncanny resemblance to the iMac. Apple won a legal judgment against Future Power and its parent company, Daewoo, which promptly removed the computer from the market.

Multiple colors, curvy all-in-one case—wait! That's not an iMac!



# Worst Strategic Flubs

Throughout its history, Apple has sometimes been its own worst enemy, making missteps that would kill lesser companies. Here are some of the more famous disasters.

**Cloning:** Licensing the Mac OS may have been a good idea, but Apple should have tried it in the mid-eighties, not the mid-nineties (see "Best Business Move," left).

The Mac OS clone program cost Apple profits without actually increasing its market share.



**Performa Ramp-Up:** By ignoring the higher-end Power Macintosh line and concentrating on the Performa line in 1995, Apple set itself up for financial failure (see "Worst Business Blunder," left).

**Best Buy Partnership:** Partnering with consumer electronics giant Best Buy was supposed to help Macintosh sales. Instead, poor customer service and a rift between the companies over forcing manufacturers to buy iMacs in multicolor packs created an unpleasant buying experience for consumers (see "Best Expo Moment," p23).

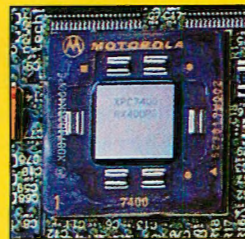


Best Buy provided poor service for Mac customers. Result: Apple boutiques.

**Ignoring the Schools:** During the summer of 2000, Apple largely ignored the education market, resulting in a loss of market share. Dell took note and challenged Apple for its long-held education crown.

**Processor Speed Gap:** We can blame this shortfall on Motorola. The company struggled to push the G4 past 500MHz for more than a year, while Intel chips zoomed on past 1GHz. Motorola has since addressed this problem with a 733MHz G4.

The 500MHz barrier proved almost too difficult for Motorola to overcome.



**PowerBook 5300:** The original Lilon batteries in this PowerBook had the potential to overheat, causing that burning sensation that became the butt of so many jokes for so long. Luckily, Apple caught the problem before any end users actually saw machines catch fire. Of course, the 5300 had a host of other problems, including display-bezel cracks and broken power adapters. Apple spent a lot of time and money fixing the damage through the PowerBook 5300's seven-year Repair Extension Program.

**Apple III Drop:** A pre-Mac flub, but just too good to skip: Just after Apple shipped the \$4,000 Apple III, a curious fix for dead-on-arrival units followed—drop them from a height of 2 to 3 inches to reseal loose chips. This wasn't the model's only problem—it lacked software as well.



# Worst User Interfaces

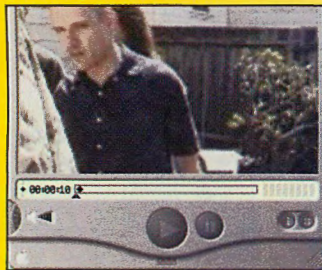
Over the years, there have been a few real clunkers when it comes to making it easy for users to actually use their software.

**Project X:** This bit of technology, first shown off in the mid-nineties, gave the Web a 3D face, allowing you to fly through space to your favorite Web site. While such an interface sounds great in science fiction, it was unwieldy and unusable in real life.



The Web as a series of 3D billboards? Sign me up.

**QuickTime 4:** By mimicking an analog device too closely, the QuickTime 4 Movie Player made you really work to use it.



Several GUI blunders put QuickTime 4's Movie Player in the Interface Hall of Shame.

**Word 6:** Ugh. Word 6 looked and felt like a Windows app.

**Any Kai Product:** While Kai Krause claimed to be a graphics application developer, in reality his products redefined Apple's GUI guidelines—and not in a good way.

**Adobe PhotoDeluxe:** This brain-dead interface took the power of Photoshop and—like a drug dealer ditching a body in a cornfield—buried it deep under buttons, pictures, and a screen-hogging background.

# Culture

Like it or not, we Mac lovers are entrenched in a culture that includes our own history, jokes, and language. Here are the best and worst cultural artifacts of that civilization.

## Best Commercial: "1984."

Although Apple has had some great commercials lately, there's still no touching the original "1984" ad that ran during the Super Bowl of



Yes, it's a hammer. No, I'm not happy to see you.

the same year. In this commercial directed by Ridley Scott, a woman wielding a hammer smashes a giant television screen that shows a Big Brother-style speaker addressing the masses. This was a metaphor for how the Macintosh would free computer users from corporate control.

**Runners-Up:** "Bunnies" (from the late nineties) parodied Intel's rainbow-hued, bunny-suited, dancing chip-fabrication workers; the stylish, arty "Think Different" marked the second coming of Jobs.

## Worst Commercial: "Lemmings."

When you're trying to sell something to a given group, it's better not to portray them as a bunch of blind fools who walk off a cliff, as Apple did in its 1985 commercial, "Lemmings."



The disturbing image of business folks blindly walking over a cliff while whistling a demented version of "Hi-Go, Hi-Go, It's Off to Work We Go"—brrr.

**Runners-Up:** "Middle Seat," the latest iBook commercial, which takes place on an airplane; and Jeff Goldblum in "Again and Again," the iMovie-iMac combo ad: While the iBook portrays Mac users as self-centered space hogs who don't know proper airplane etiquette, a singing, dancing, muttering Jeff Goldblum is just plain annoying—even in slow motion.



Portraying iBook users as obnoxious—a brilliant strategy.

## Best Commercial Spoof: "The Power to Crush the Other Kids."

In this *Saturday Night Live* spoof, one kid brings in a report so compelling that it's enough to send the other kids in his class to therapy. The tagline, "The Power to Crush the Other Kids," takes off on Apple's "The Power to Be Your Best."

## Best Apple-Related *Simpsons* Joke: "Eat up Martha."

In a knock on the Newton's notoriously poor handwriting recognition, bully Kearney tells his cohort Dolph to take a memo on the Newton. The device misinterprets the phrase "beat up Martin" as "eat up Martha."



The *Simpsons* contains several Apple-related references.

## Best Mac Personality: The other Steve—Wozniak.

Known as Woz, Steve Wozniak is Apple's other founding partner. Throughout his life, he has followed his passions, devoting his life to engineering and education, providing hardware and help to schools and students. Visit him at [www.woz.org](http://www.woz.org).



Steve Wozniak is known for his engineering prowess and his sense of humor.

## Worst Fair-Weather Fan: Stewart Alsop.

When Apple bought NeXT instead of Be, *Fortune* columnist and Be Inc. investor Stewart Alsop wrote a scathing article in January 1997 about how this move would doom Apple, and recommended that people switch to Windows. In a June 2001 column, Alsop reversed his opinion, urging people to return to the Mac. He just bought a TiBook. We forgive you, Stew.

## Best Mac-Related Web Site: As the Apple Turns.

A consistently funny read, As the Apple Turns ([www.appleturms.com](http://www.appleturms.com)) maintains a sense of humor and style while not taking itself too seriously.

## Worst Mac-Related Web Site: IHateApple.com.

This site ([www.ihateapple.com](http://www.ihateapple.com)) devotes itself to trashing Apple and the Macintosh, so brace yourself if you choose to visit. The greeting isn't exactly friendly.

## Best Enemy Turned Friend (or Neutral Party, Anyway): Microsoft.

Make no mistake, Microsoft still wants world domination, but it no longer seems bent on killing the Mac with substandard software and support. To this end, Microsoft has produced a series of killer Macintosh applications (such as Internet Explorer 5 and Office 2001), and it maintains the largest (and one of the most Mac-friendly) development houses in existence. Things are better this way—trust us.



# Hardware and Software

Well, we couldn't stay away from having our say about the actual hardware and software that's kept the Macintosh universe chugging along all of these years. Here goes.

## Best Case Design: G4 tower.

A variation of the case design first introduced in 1999 with the Blueberry G3, the G4's fold-down motherboard design makes adding RAM, PCI cards, and hard drives very easy. Now, if Apple would just add one more full-height, front-accessible drive bay, this tower would be ideal.

**Runner-Up:** PowerBook G4. This drool-inducing case design is thin yet rugged.

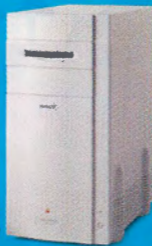


The easiest upgrades ever—just fold down the motherboard and pop in your new hardware.

## Worst Case Design: Power Mac 8500 and 9500.

This list is long, but we narrowed it down to the tower that drew blood if you wanted to upgrade. To put RAM in an 8500 or 9500, you had to remove the motherboard from the computer after pulling off all the connectors and the outer shell. This case was as bad as that of *any* PC you can name.

The case design of the 8500 and 9500 sometimes drew blood.



## Best Mac Operating System: Mac OS X.

With Unix at its base, the best graphics and font capabilities around, killer networking, and a truly beautiful GUI, Mac OS X is the foundation for the best computer operating system for many years to come.

## Worst Mac Operating System: System 7.5.2.

With constant crashes and errors, it was a wonder that *anyone* could make Macs do anything useful while running this version of the Mac OS—it caused constant freezes, crashes, and Type 11 errors. Fortunately, Mac OS 7.6 wasn't far around the corner, and that release steered the Mac back onto the road of stability.

## Best Upgrade You Can Make: RAM.

Given the current low price of RAM and Mac OS X's memory-management capabilities, adding more RAM is the best thing you can do for your Mac. It's cheap and easy to install, and it makes a huge difference.



For under \$100, you can get a killer RAM upgrade.

## Worst Upgrade You Can Make: Processor card.

By the time you pay for a processor card upgrade, you're a good portion of the way to a brand-new Macintosh—which often makes more sense, since each new bit of Mac hardware includes all kinds of improvements that processor upgrades can't even touch. About the only time these upgrades make sense is if you either have a ton of money invested in peripherals that won't work with a new machine or you just *can't* afford a new Mac (or you're very attached to your old one).

## Best Troubleshooting Tip: Back up your hard drive.

Thought we were going to say "Zap your PRAM," didn't you? Although backing up your hard drive won't solve tricky problems, it does allow you to recover fully from any hardware or software disaster. Back up—and do it often.

## Worst Benchmark: Scrolling.

Scrolling through data cached in memory makes a good test of video abilities and memory access, but it doesn't make a good general-processor test. That's because many programs use a scrolling throttle, which keeps today's machines from scrolling too fast by purposefully slowing the motion to a reasonable level. Also, scrolling depends on the machine's video subsystem and operating system.

David Reynolds is currently compiling his own "Best and Worst of David Reynolds" list. Look for it in paperback this fall.

# Worst Hardware

Apple has foisted some truly abysmal hardware designs on the Macintosh community. Here's the worst of the worst.

**Macintosh Portable:** At 15.8 pounds, the original Macintosh Portable was more battery than laptop.

Users nicknamed it the Luggable after its appearance in 1989.



About as heavy as a couple gallons of milk, the Portable would bust any backpack's handle.

**Performa 6200 Series:** Underpowered and overpriced, the 6200 series used PowerPC 603 chips without any cache in some models—making them guaranteed slowpokes.

## 20th Anniversary

**Macintosh:** By building an underpowered computer with obscure technologies and then giving it a \$10,000 price tag, Apple ensured that the special-edition Macintosh would fail when released in June 1997. And it did.



All style, little substance.

**GeoPort Modems:** Since these adapters used software to handle modem communications, they tied up the Mac's processor with encoding and decoding—slowing down your system considerably when in use.

**Puck Mouse:** With no tactile reference to tell the user which way was up, the puck mouse that shipped with the original iMac and with the G3 and G4 towers made controlling your Mac painful and annoying. Apple improved it—a little—by putting a groove on the button.



Which way is up? We don't know.

**StyleWriter I:** Two words (OK, three)—water-soluble ink.

**AppleVision Monitors:** Notoriously flaky, these monitors required an ADB connection to work properly.



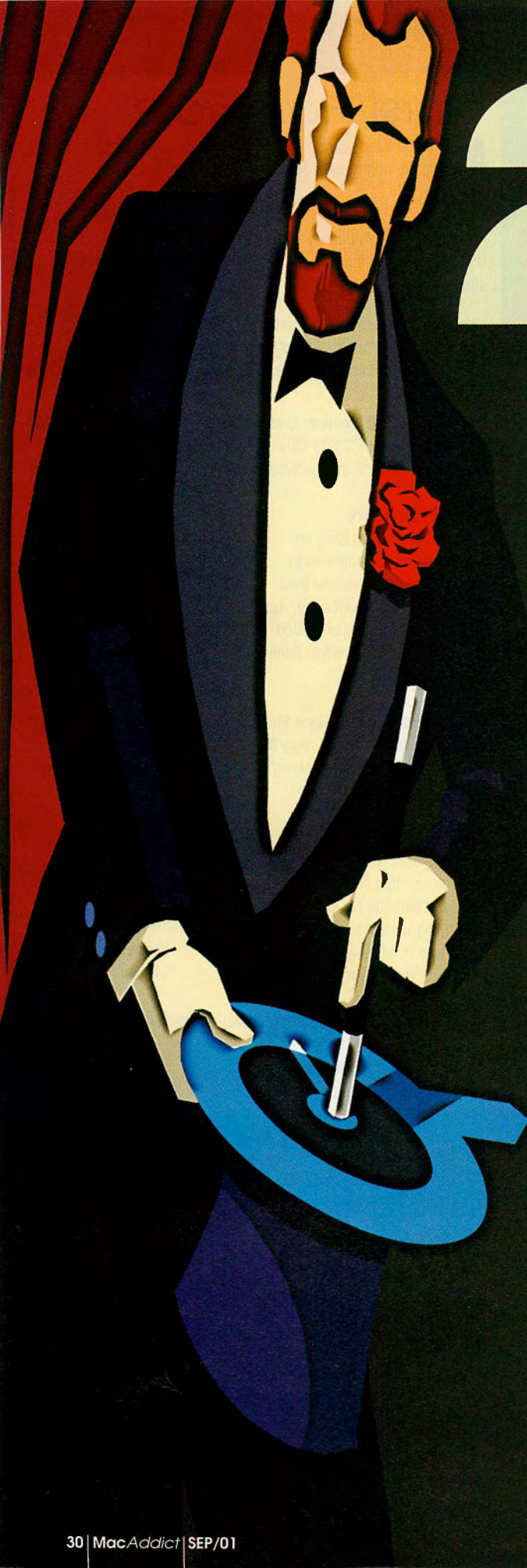
If your AppleVision monitor decided to recalibrate in midgame with a color shift, you were in real trouble.

**Pippin:** This attempt at a set-top gaming machine running the Mac OS—a collaboration between Apple and Bandai—was almost impossible to use thanks to poor text rendering, an underwhelming graphics system, and a dearth of games.



With the gaming power of a circa-1996 Macintosh and Bandai's stellar marketing, how could the Pippin go wrong? Oh, yes. How indeed.





# 20 QuickTime Tricks

**Get the Most Out of Apple's Supercool,  
Supercheap Media App**

**Q**uickTime's just for playing movie trailers, right? Wrong. With QuickTime, not only can you play the widest possible range of media formats (including movies, streaming TV, Flash, MP3s, and QuickTimeVR), but you can also create your own sound and video movies and do much more than you ever imagined possible.

The latest iteration of Apple's wonder app is QuickTime 5 (there are two versions: free and Pro). Much of what's new about QuickTime 5 is under the hood—for example, support for real-time processing of effects. QuickTime Player has had a makeover too, with a new Aqua appearance and a workable volume-control slider. Plus, the more arcane QuickTime Player editing commands, such as Add Scaled, now appear right in the Edit menu.

We've collected 20 of the coolest tips, tricks, and tutorials to help you get the most out of QuickTime. While most of these nuggets are not new to QuickTime 5 (with the exception of making a QuickTime skin), you should consider upgrading to the latest version so you can access the app's newest features. Also, many of the tips require the Pro version of the software. QuickTime Pro 5 (\$29.95, [www.apple.com/quicktime](http://www.apple.com/quicktime)) has loads of features the free version doesn't, and let's face it—it's a bargain. We marked projects that require QuickTime Pro with a QuickTime icon, but if you don't want to shell out the cash, there are plenty of others you can do using the free version. Either way, you're guaranteed to learn something new about Apple's media marvel.

**by Steve Anzovin**

Illustration by John Kleber



# 1. Play Movies from the Keyboard

You don't need no stinkin' mouse if you know a few simple QuickTime Player keyboard commands:

- Press the Return key or the spacebar to start and stop playback.
- Press Command-O (zero) to play a movie at half size. Command-3 expands the movie to fill the screen.
- The right- and left-arrow keys step through the movie frame by frame. Option-left arrow takes you to the start of the movie; Option-right arrow goes to the end.
- The up- and down-arrow keys adjust sound volume.

## 2. Translate Image Files with Picture Viewer

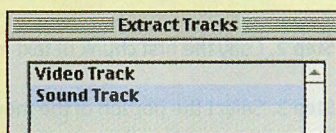
Picture Viewer, which comes with QuickTime, is a free image viewer that also has a file translation and export feature for creating JPEGs, BMPs, PNGs, and most other popular still-image formats. Even better, it has features other image-editing apps don't, such as the ability to specify a JPEG target file size or the exact percentage of compression.

From Picture Viewer, open an image file and choose File, then Export. Choose JPEG from the pop-up menu. Click Options to bring up a dialog box where you can type in a target file size (you'll search in vain for that feature in Photoshop).

## 3. Extract a Soundtrack

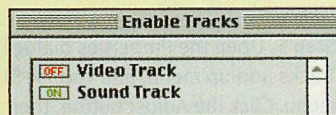
You just downloaded a new movie trailer. Frankly, the visuals stink, but you love the score. In fact, you want to play the audio all by itself. Here are two methods for extracting a soundtrack:

**Method 1.** Open the movie and choose Extract Tracks from the Edit menu. Select Sound Track and click Extract. QuickTime will create a new sound movie with just that media track. Save it as a self-contained movie.



Use the Extract Tracks feature to extract a soundtrack.

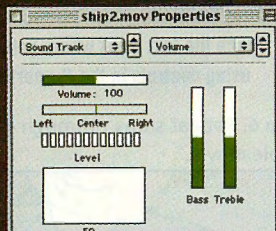
**Method 2.** Go to the Edit menu, select Enable Tracks, then turn off all tracks except the audio by clicking the on-off switch next to each track (you can always turn tracks back on).



Turn tracks on and off in the Enable Tracks dialog box.

# TIP

Here's a trick to make a movie's audio always play at a certain volume. Go to the Movie menu and choose Get Movie Properties. In the Properties box, select Sound Track from the Tracks pop-up menu (on the left), and choose Volume from the Properties pop-up menu (right). Play the movie while dragging the green volume bar right or left to set the new volume level. Setting it in the red area (more than 100 percent of the original volume) may result in distortion.



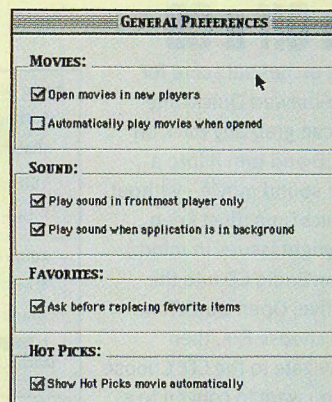
Set the default sound level for your movie in the Properties panel.

## 4. Assemble a Movie

Requires QuickTime Pro

Like to keep your moviemaking simple *and* cheap? You can actually assemble your movies entirely in QuickTime Pro, without recourse to editing programs like Premiere or Final Cut Pro.

**Step 1.** Open two movies in QuickTime Player. To get QuickTime to open a second movie in a new window, head to the Edit menu and select Preferences, then Player Preferences. Check the Open Movies In New Player box. We're going to cut a piece from Movie 1 and put it into Movie 2.



To open the second movie in a new window, check the Open Movies In New Player box.

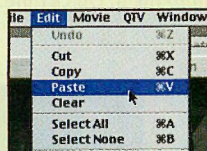
**Step 2.** Note the triangular markers on the time slider. The upper triangle shows the current frame. The lower, smaller triangles let you set a range of frames for editing—dragging them apart selects a piece of the movie. Select a segment of Movie 1. Press Shift-right arrow or Shift-left arrow to trim or expand the selection by single frames. Go to Edit and choose Copy.



Select the areas to edit using the timeline markers.

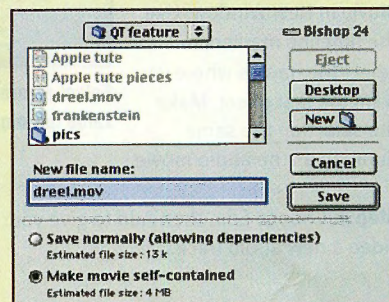
**Step 3.** In Movie 2, drag the timeline's upper triangle to the frame where you want to insert the material from Movie 1. Or you can use the lower markers to select a range of frames if you want the new footage to paste over a selection in Movie 2.

**Step 4.** Go to Edit and choose Paste to incorporate the segment from Movie 1 into Movie 2.



Copy and paste the selection from Movie 1 into Movie 2.

**Step 5.** To save Movie 2, go to the File menu and select Save As. Click the radio button next to Make Movie Self-Contained. The alternative—Save Normally (Allowing Dependencies)—will save Movie 2 with a file reference pointer that refers to the selected frames in Movie 1. The problem? If Movie 1 is no longer around, Movie 2 won't be able to find the new frames.



Save the whole shebang as a self-contained movie if you value your life, or rather your movie.



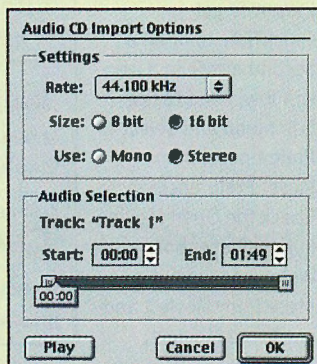
## 5. Play a Movie Backward

You never know what you'll find when you play that movie backward. Hold down the Shift key and double-click the movie window. And yes, even the sound runs in reverse.

## 6. Rip Off a CD

Need a big orchestral score for your home-brewed QuickTime epic? You can grab any track off an audio CD and turn it into a QuickTime sound movie—without leaving QuickTime. (Just keep those copyright issues in mind.)

Insert an audio CD into the CD-ROM drive. Open QuickTime Player and choose File, then Import. Navigate to the CD. Choose the track you want to convert to a movie and click Convert. Click Options to set audio parameters, such as sample rate, or to clip just the part of the track you need.



Grab your favorite tracks using QuickTime.

## 7. Add Sound Effects Requires QuickTime Pro

No family film is complete without rude noises and sarcastic asides—added by you, of course. Use the following technique to add a second soundtrack for impolite effects (or any other kind).

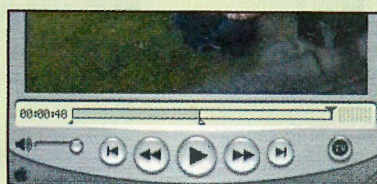
**Step 1.** Record the effects using your Mac's mike (if it has one) or another audio-recording source. Or grab audio tracks from a CD (see "Rip Off a CD," above). Save each effect or track as an individual sound file.



Open a sound file in any QuickTime-supported audio format. Sound movies look like this.

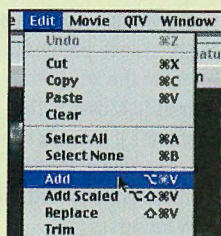
**Step 2.** Open the first audio file in QuickTime. Do a Select All, then Copy.

**Step 3.** Open the video movie in a separate QuickTime Player window: Under File, select Open Movie In New Window. Use the timeline markers to select the frames where you want the first effect. Make the selection the same duration as the audio movie.



Select an area in your video movie with the same duration as the sound movie.

**Step 4.** Choose Edit, then Add to give your video a new audio track.



Choose Add from the Edit menu to insert the sound movie as a second soundtrack in your video.

## 8. Convert a QuickTime Movie to an MP3 File

There are some pretty clever scores for short films available on the Web, and you've found a few you'd like to play on your MP3 player—but of course the soundtracks are in QuickTime format. No problem, as long as you have Apple's iTunes MP3 player. If not, get it at [www.apple.com/itunes/download](http://www.apple.com/itunes/download)—it's free, so why not?

Open iTunes and choose Advanced, then Convert To MP3. Find your movie and click OK. Ripping to MP3 takes about the same amount of time as playing the movie. The new MP3 will appear in your iTunes Library with the same name as the QuickTime movie. However, you don't need to convert a QuickTime movie to MP3 to play its audio in iTunes. Just drag the movie to the playlist—it will appear in your library and play like any other audio file, as long as the movie stays on your hard disk.



Yet another handy use for iTunes—turn QuickTime audio into an MP3 sound file.

## 9. Subtitle Your Movie Requires QuickTime Pro

Producing a movie for an international audience? Need to add text explaining just what the heck is happening onscreen? You can easily insert subtitles under selected frames of a QuickTime movie without obscuring any of the action.

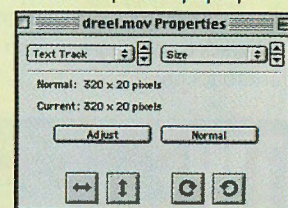
**Step 1.** Type your subtitle text in a word processor document. Think in terms of text chunks—how much text fits on a frame (not very much) and how many chunks of text you want to include in your movie.

**Step 2.** Copy the first chunk of text to the clipboard.

**Step 3.** Select the portion of the movie timeline where you want the first subtitle to appear.

**Step 4.** Choose Edit, then Add Scaled to add the contents of the clipboard as a new text track on top of the video.

**Step 5.** Open the Properties dialog box, select Text Track from the Tracks pop-up menu, and choose Size from the Properties pop-up menu. Click the Adjust button, then drag the highlighted text box where you want it. Resize it by dragging the corners. Note: This increases the pixel area of the movie.



Place the text track where you want it using controls in the Properties box.

**Step 6.** Repeat steps 1 through 5 as often as needed to subtitle the whole movie.



They're not beautiful, but these titles do the job.



# 10. Make a QuickTime 5 Skin

The coolest new feature of QuickTime 5 Pro is Media Skins, a custom interface with sprite-based controls. Unfortunately, designing a custom wired-sprite interface (animated, interactive controls created outside QuickTime and wired into a QuickTime movie's sprite track) is more than we can handle in this article. But we *will* show you how to make the actual skin, a graphic frame that sticks with your movie wherever it goes. You'll need a graphics app like Adobe Photoshop and a text editor like SimpleText. Note that only those who use QuickTime 5 can view the skinned movie; it will look like a regular movie to everyone else.

**Step 1.** Create the skin graphic in Photoshop. Do this in layers, with each graphic element on its own layer. Use plain black or white for areas you want transparent, and leave an area in which your movie can play. In our example, the central square is 320 by 240 pixels. Flatten the image and save it in PICT or any common graphics format (but keep the original Photoshop file with layers intact—you'll need it later).



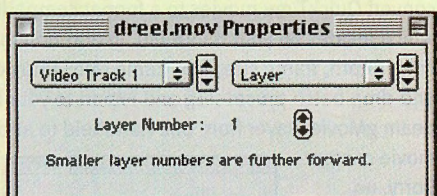
Create a skin graphic in Photoshop. Go ahead—make it weird.

**Step 2.** Open the skin graphic in QuickTime Player. Do a Select All, then Copy.

**Step 3.** Open the video movie you want to play inside the skin. From the Edit menu, choose Add Scaled. QuickTime will add the skin graphic in a new layer on every frame of the movie.

**Step 4.** Oops, your skin covers the video movie. No problem. Bring up the Properties box. You'll see two video tracks now. Choose Video Track 1 (the original movie layer) from the Track pop-up menu and Layer from the Properties pop-up menu. Click the Layer arrows until the movie appears over the skin graphic—lower numbers bring a layer closer to the viewer.

Next, adjust the size (see "Subtitle Your Movie," p32) to position the video track where you want it. Alternatively, specify a transparent color in the skin graphic layer by choosing Graphics Mode, then Transparent in the Properties pop-up menu. Move the movie behind the skin graphic—it will show through the transparent color you chose.



Adjust the Track layers so the movie plays in front of the skin (or behind it if the skin has a transparent window).

**Step 5.** Save the new movie as a self-contained movie. When you play this movie, the skin appears inside a standard QuickTime Player window, and your video movie plays inside the skin.

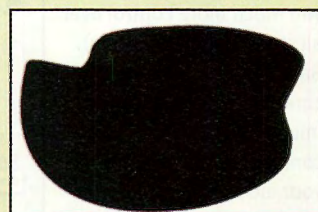
Here it is, folks—the movie placed in the correct spot in the skin.



**Step 6.** But what if you want to dispense with QuickTime and make the skin the stand-alone player interface? You'll need to design custom movie controls using wired sprites and a QuickTime sprite editor, such as Totally Hip's LiveStage Pro 3 (\$899.95, [www.totallyhip.com](http://www.totallyhip.com)) or Adobe's GoLive (\$284, [www.adobe.com/products/golive/main.html](http://www.adobe.com/products/golive/main.html)). Or you can use Macromedia's Flash (\$399, [www.macromedia.com/software/flash](http://www.macromedia.com/software/flash)) to add interactivity.

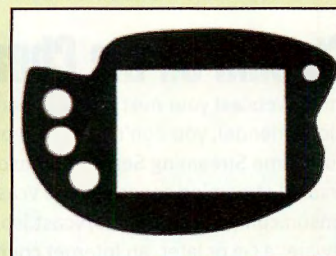
Meanwhile, here's how to create the two additional skin masks necessary so your viewers won't have to see QuickTime Player at all. The window mask creates the custom-shaped area for the QuickTime window, while the drag mask defines areas that can respond to mouse clicks and drags.

First add a window mask to the Photoshop file you've been working on—this is the mask defining the window where your movie plays. Base this on the skin image you created before, making the window area black and everywhere else white. Save it in PNG or another common graphics file format.



This is the skin's window mask in all its glory.

**Step 7.** Create the drag mask. This is the same as the window mask, but it also has white (that is, transparent) areas where the video window and sprite controls will sit. Save it in PNG or another common file format.



This is what the skin's drag mask looks like.

**Step 8.** Now you need to create a text movie that ties all the images together. You'll need to type some XML code in SimpleText. Use the following code as a guideline:

```
<?xml version="1.0"?>
<?quicktime type="application/x-qtskin"?> <skin>
<movie src="yourmovie.mov" />
<contentregion src="windowmask.png" />
<dragregion src="dragmask.png" /> </skin>
```

**Step 9.** Save your SimpleText document as a plain-text file with a name ending in .mov. Open the text file in QuickTime Player and save it as a self-contained movie. Put the original text file, the file version you have saved as a movie file, the skin and mask files, and the video movie file in a single folder. When you distribute your skinned movie, make sure all the files are together—your viewers will need the whole lot to make this trick work.

Put it all together, and the skin appears as the only frame for your movie.

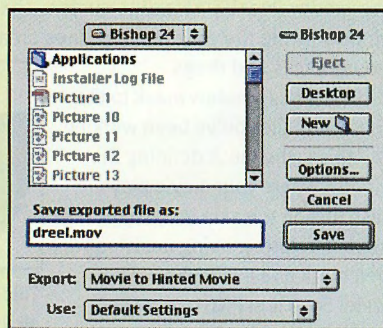




## 11. Prepare Your Movie for Internet Streaming Requires QuickTime Pro

Every streaming QuickTime movie must have a *hint track* for each of its media tracks (except for QuickTime VR, Flash, and sprite tracks, which cannot stream). Hint tracks provide the streaming server with essential protocol information like packet size and connection speed.

To add hint tracks to an already compressed movie, go to Export. Choose Movie To Hinted Movie from the Export pop-up menu, and choose Default Settings from the Use pop-up menu (although if you know what you're doing, the Options button gives you much more control over all streaming parameters). Save the movie as a self-contained movie with the .mov suffix. So you won't confuse any file system your movie may encounter on the Web, avoid using spaces and arbitrarily mixing uppercase and lowercase letters in the file name.



Save your movies as hinted files to ready them for streaming.

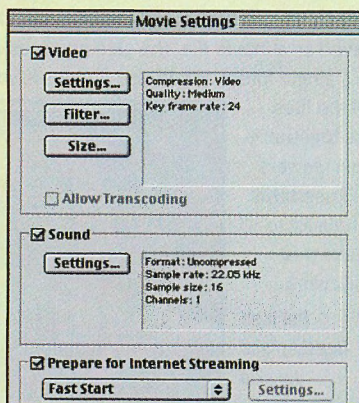
## 12. Stream on the Cheap

If you want to Webcast your next birthday party to the world (or at least to a few close friends), you don't need your own server, reflector, or copy of QuickTime Streaming Server. Sorenson offers a QuickTime-based personal streaming service called Vcast Personal Broadcaster at [www.sorenson.com/web/products/vcast.jsp](http://www.sorenson.com/web/products/vcast.jsp). All you need is the Vcast client software, a G3 or later, an Internet connection (the faster, the better), and either prerecorded content or a camera or VCR connected to your computer via a capture card. You specify how many people you want to see the broadcast, and Sorenson charges accordingly.

## 13. Make a Fast Start Movie Requires QuickTime Pro

If you're putting your movie up on the Web, make it begin playing immediately on download—even if the movie isn't streaming—using QuickTime's Fast Start feature, also called *progressive download*. Fast Start requires that your viewers have a recent version of the QuickTime plug-in and a modern browser (anything later than QuickTime 3 and either Netscape or Microsoft Internet Explorer 3).

Movies created in QuickTime Pro 5 have the Fast Start option turned on by default. Save other movies as Fast Start movies by opening them in QuickTime, selecting Save As, and renaming the file with the .mov file extension. To make sure Fast Start is turned on, go to Export, choose Movie To QuickTime Movie in the Export pop-up menu, click Options, and check the Fast Start option under Prepare For Internet Streaming.



Set your movie for Fast Start so that it... well, starts fast.

## 14. Banish QuickTime Player

Think the brushed-chrome QuickTime Player is a bloated and tacky monstrosity? How right you are. You can hark back to the days of MoviePlayer instead. This ancient ancestor of QuickTime Player still works under QuickTime 5, and it has a minimalist interface—the spiffy little controls occupy a refreshingly unobtrusive slice just 16 pixels high under the movie area. No, you don't get all of QuickTime Player 5's bells and whistles, like audio controls and QuickTime TV—but frankly, for playing movies off the desktop, who needs 'em?

We recommend using MoviePlayer version 2.5.1; make sure to get the accompanying Authoring Extras and Goodies plug-ins for full functionality. The trick is *finding* the thing, as Apple has done a good job of making it disappear. One place to look is [www.open.org/~peltierd/Pelt.pg.hqx/\\_QuickTime2.5Installer.sit.hqx](http://www.open.org/~peltierd/Pelt.pg.hqx/_QuickTime2.5Installer.sit.hqx). If you've had a Mac for a couple of years, it may also be lurking somewhere on your hard disk, waiting for rediscovery.



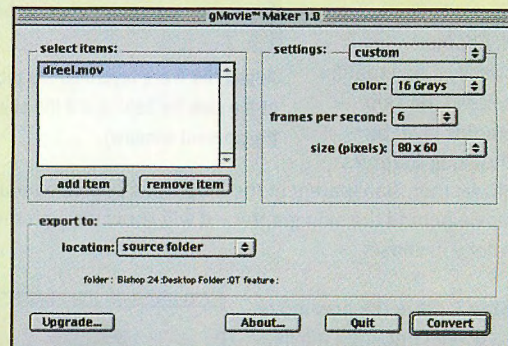
Remember MoviePlayer?  
It still works under  
QuickTime 5—and it  
looks better than ever.

## 15. Play QuickTime Movies on Your Handheld

If you can't stand to be without your movies—ever—play 'em on your Palm OS handheld using gMovie Maker (\$29.97) and gMovie Player (free) from Generic Media ([www.genericmedia.com/products.html](http://www.genericmedia.com/products.html)).

gMovie Maker is a conversion tool that runs on your Mac; it can convert QuickTime movies to a format compatible with gMovie Player, which resides on your handheld. In addition to controlling settings for color depth, frame size, and frame rate, gMovie Maker provides drag-and-drop batch processing and export to your HotSync folder. You can beam gMovie Player from one handheld to another along with the movie content.

Sorry, no audio—but that's a limitation of the current Palm OS.



Hold QuickTime  
in the Palm of  
your hand using  
gMovie Maker.

**TIP** If your movie skips frames or bounces back and forth from beginning to end in gMovie Player, you've specified a frame rate faster than your handheld can handle. Go back to gMovie Maker and lower the fps rate. Current-generation handhelds can't deal with movies that play at more than 6 fps.



## 16. Put QuickTime into Your HTML

The Web is *the* best place to show your movies (short of the local Sony theater). All programs for Web-page creation support drag-and-drop placement of QuickTime movies onto a page, but if you're hand-coding HTML, you need to use the `<EMBED>` tag, which calls a helper app or plug-in to aid the browser in displaying media types. Here's a typical sample:

```
<EMBED SRC="mymovie.mov" HEIGHT=256 WIDTH=320>
```

What follows SRC is the movie's URL in quotes, HEIGHT is the movie's height in pixels (plus 16 pixels for the controller), and WIDTH is the movie's width in pixels.

## 17. Make a Poster Movie

Rather than embedding a full movie on your Web page, you can use a *poster movie*—a still image that loads and plays the full movie when you click it. Poster movies use less RAM, and you can store the real movie anywhere on the Web, since the poster movie contains a URL linking to that file.

Open the full movie and go to any frame. Choose Copy. Under File, select New Player, then Paste. Save this one-frame movie as a self-contained movie with the .mov extension. Embed the movie in your Web page using the following sample HTML:

```
<EMBED SRC="poster.mov" HEIGHT=256 WIDTH=320  
HREF="mymovie.mov" TARGET="myself">
```

HREF adds a URL to the poster movie, pointing to the full movie (*mymovie.mov*), and TARGET makes the poster movie clickable.

## 18. Make QuickTime Music

One of the least-used features of QuickTime is its suite of MIDI instruments, included in the QuickTime Musical Instruments file in your Extensions folder (in Mac OS 9.x). The MIDI (Musical Instrument Digital Interface) language enables musical devices to exchange information about a performance. QuickTime contains a number of high-quality sounds for orchestral instruments—for example, piano, violin, flute, and drums—and all kinds of other noises, ready for use with any compatible MIDI synthesizer. And there are some cool sounds out there. We had fun with Virtual Drummer ([www.versiontracker.com/redir.fcgi/kind=1&id=4761/vd412.sit](http://www.versiontracker.com/redir.fcgi/kind=1&id=4761/vd412.sit)), an easy-to-use QuickTime-compatible drum kit. Bang away!

Steve Anzovin spends most of his day as the producer at Anzovin Studio, a 3D animation and effects house. The rest of the time, he is being pummeled by his daughters.

## 19. Compile 3D in QuickTime

Here's a quick trick for all you 3D animators. If your animation program allows it, render files out as a numbered image sequence, not as a QuickTime movie. Then compile the images into a movie (see "Make a QuickTime Slide Show," below). Why bother? Given the instability of most 3D software, there's always a chance the render process will crash before it finishes. If you are rendering a QuickTime movie, it ends up corrupted, and you've wasted your time and effort—maybe days of work for a big animation. Render the movie as an image sequence, however, and you lose only the last frame—after restarting, you can pick up where you left off.

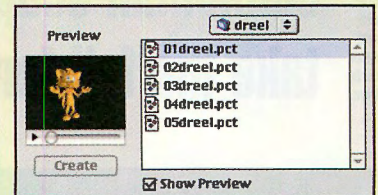
## 20. Make a QuickTime Slide Show



You can combine QuickTime's ability to read almost every popular graphics format with its insert-editing and text-track capabilities to make a slide show with audio. But if you're a no-frills type of person, here's how to create a simple slide show.

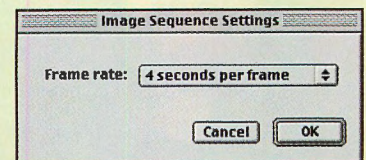
**Step 1.** Create the slide files and name them as an image sequence with numbers in the file names: 001.jpg, 002.jpg, and so on. Store them all in one folder.

To make a simple slide show, import a numbered image sequence.



**Step 2.** Open QuickTime Player and choose File, then Open Image Sequence. Navigate to the image sequence you imported; QuickTime will automatically recognize it, if you named its components correctly.

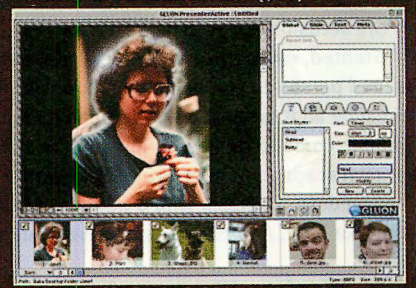
**Step 3.** Choose Open and the Image Sequence Settings dialog box appears; choose the number of seconds each slide should display, then click OK. QuickTime Player will compile the images into one movie with the specified slide durations.



Set the duration of each slide in the Frame Rate pop-up menu.

**TIP** You'll get better results with a slide-making program such as Gluon's PresenterActive 2.01 (free for basic version, \$29 for full version, [www.gluon.com/freeFrame.htm](http://www.gluon.com/freeFrame.htm)). PresenterActive allows you to save slide shows with many transition effects (wipes, dissolves, and so forth), export folders of images as HTML or as a JPEG contact sheet, add text to slides using style sheets, and create master slides. Another QuickTime slide-show utility is Realmac Software's iSlideShow (\$10, [www.realmacs.co.uk](http://www.realmacs.co.uk)), which offers transitions and other essential presentation effects.

With PresenterActive, you can make sophisticated-looking slide shows.





# Create a Fake Person

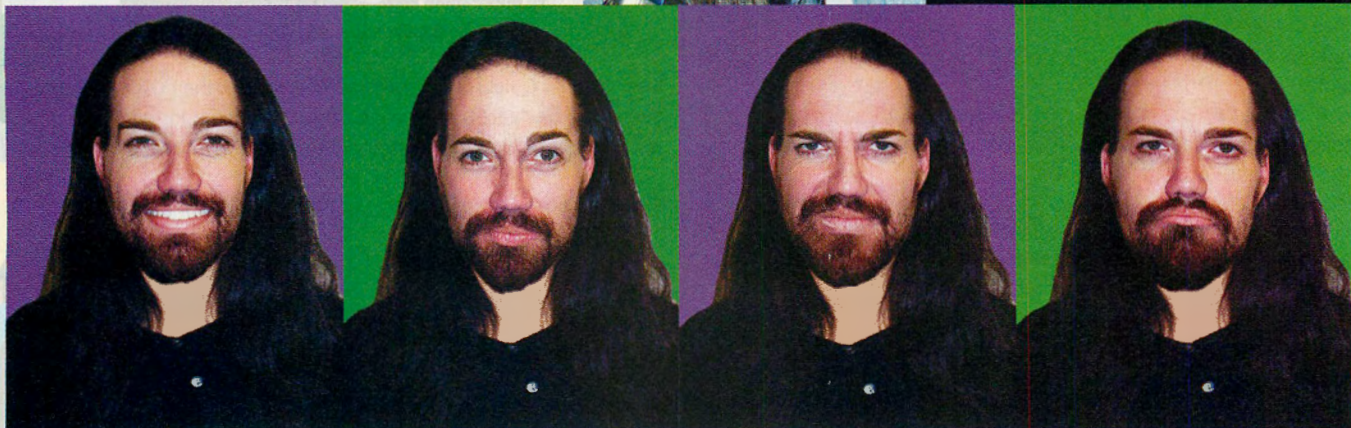


Find tutorial photos, a Photoshop 6 trial, alternative image editors PhotoLine and GraphicConverter, and a Photostudio trial on The Disc.

**How to construct your own subhuman scapegoat to take the fall for you**



**Note: this is not a real person**



It's not my fault. It wasn't my idea. I had nothing to do with it. Sound familiar? It should—we're quoting you. There's no denying that you have uttered these phrases at one point or another—sometimes even truthfully. More than likely, these words served as a way to avoid fessing up to your crime and facing your inevitable punishment. It's easy to do the finger pointing, but a lot harder to stomach the blame. We know—we've got a supersize bottle of Tums for the occasion.

Granted, everyone makes a few mistakes, and it takes a strong-headed person to shoulder the responsibility when things go south, or maybe all it takes is a strong head on a pair of shoulders. Hmm...come to think of it, it would be mighty convenient if we had our own scapegoat—a fall guy or girl who'd take the blame for all of our blunders, an editor who'd never complain, collect a paycheck, or drink our beer. A person at whom we could point a finger—and who

wouldn't give us the finger in return—whenever we print a glaring error, include a virus on The Disc, or forget to convert RGB images to CMYK. Where could we find such a person? Well, we can build him (or her)—we have the technology.

Let us introduce you to our new editor, Skip Goat. In case you haven't figured it out, he is actually a composite of the *MacAddict* edit staff. While we created Skip purely for entertainment purposes, you'll no doubt have your own reasons for building a fake friend.

We'll show you how we created Skip step by step in Photoshop (see [www.adobe.com/products/photoshop/tryreg.html](http://www.adobe.com/products/photoshop/tryreg.html) for a trial version) and helped him interact with other staff members by placing him into photos and even a video. Plus, we'll suggest ideal situations in which to introduce your "friend" and some real-world ways to establish his or her identity. Should any of your shenanigans get you into hot water, it wasn't our fault and we had nothing to do with it.

**by Kris Fong**



## Sample the Gene Pool

To create our new editor, Skip, we composited a number of photos. This means we built one person by combining different facial features from an assortment of pictures—kind of like a virtual Mr. Potato Head. Of course, you'll need to snap photos of a variety of people to get a good assortment of features. Since we were conspiring to create a fake editor, we headed straight to the source itself—the *MacAddict* gene pool.

To make sure our fake editor didn't get stuck with just one mug shot, we took head shots of each editor wearing a variety of expressions. Keep in mind that the more people you shoot, the more possible combinations you can conceive later on. You'll need a camera (digital will save time, but film is fine if you have a scanner), a tripod, a seamless white backdrop, and an image editor.

## Take the Shot

Find an area near a wall with even lighting—avoid sunlit areas or you may have to contend with harsh shadows on one side of the face. Hang the backdrop high on the wall—a roll of butcher paper or the reverse side of wrapping paper will do. Place a stool or low-backed chair directly in front of the backdrop and have your first subject take a seat. Mount your camera to the tripod, position it to take portrait-oriented (vertical) shots, and move it in close so you won't see the edges of your backdrop. Once positioned, don't move your camera or the chair—otherwise the perspective will change.

Use the zoom to frame a tight head shot and snap the picture. If the light level is low, use the red-eye flash on your camera. Use the same camera settings for each shot to avoid exposure discrepancies. Our editors posed with different expressions for each shot—normal, happy, sad, pissed off, surprised, and stressed. Though we had our staff face forward throughout the shoot, consider taking pictures of your subjects at different angles, such as their full left and right sides, their left and right sides at quarter-turn views, and their backs. This will give you the largest range of choices when compositing full-body photos.

## Choose Your Image Editor

We chose to use Photoshop 6.0, but other image editors will yield similar results—we've included several on The Disc. It's best to use software that supports layers:

- **Deneba Canvas Standard Edition** (\$99.95, [www.deneba.com](http://www.deneba.com))
- **Corel Photo-Paint** (\$319, [www.corel.com](http://www.corel.com))
- **Photoshop Elements** (\$99, [www.adobe.com](http://www.adobe.com))
- **ArcSoft PhotoStudio** (\$99.99, [www.arcsoft.com](http://www.arcsoft.com))
- **Human Software PhotoZest 2000** (\$49, [www.photozest.com](http://www.photozest.com))
- **Computerinsal PhotoLine 32** (\$69, [www.pl32.com](http://www.pl32.com))

You can also use image editors that don't support layers, but there's no going back to a previous layer to make a tweak—that means you'll have to complete all individual adjustments to, say, a newly placed nose before adding the mouth. If you go this route, consider the following applications:

- **Lemke Software GraphicConverter** (\$30 download or \$35 CD-ROM, [www.lemkesoft.com](http://www.lemkesoft.com))
- **MicroFrontier Color It** (\$49.95, [www.microfrontier.com](http://www.microfrontier.com))

## A Friend in Need

**W**hile creating the perfect scapegoat may satisfy your need to lay blame elsewhere, there are other ways in which creating a fictitious person can reward you. Imagine these possibilities.

**Snag Online Dates.** In cyberspace, you can be anyone. Create your own studly alter ego or voluptuous vamp and hide your horn-rimmed glasses behind your monitor screen.

**Revenge.** You've been dumped by little miss understood. Make her jealous by creating the perfect dream girl, slipping yourself into the pic, and casually emailing it to your ex.

**Silence Nagging Parents.** The parental units hound you constantly about finding a nice date. Show them a picture of you and "yours"—but prepare to make excuses during the holidays.

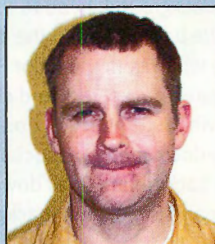
**Social Occasions.** Class reunions, company parties, and weddings...what's a single girl or guy to do at these times? Concoct a fake husband or wife, along with a few sordid stories, and bring along the pictures. Oh, and if anyone asks, your spouse is busy taking care of a sick parent—this adds to the authentic aura.

## MacAddict's Finest

**A** key to building a fake person is to capture a variety of facial expressions. This gives you more options for creating a wide array of faces for your fake person. Here are some of the expressions we caught, along with the rather odd thoughts our editors had during the shoot.



Cathy Lu.  
But I don't wanna be  
a hair model...



Christopher Imlay.  
Just call me  
Popeye!



Dave Reynolds.  
It only hurts when  
I smile.



Andrew Tokuda.  
Ack! Where are  
my pants?



Jenifer Morgan.  
But there are spiders  
in there...



Narasu Rebbapragada.  
All right, who farted?



# Making Faces

Once you've snapped enough photos to fill your gene pool, you're ready to begin designing your own virtual guy or gal. Experiment with different combinations of facial features—some will work, while others may lead to *X-Files*-type throwbacks.



## 1. Get a Head

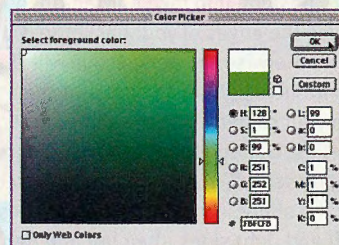
Determine which of your subjects will be your hair, neck, and shoulders model. This person will serve as your bottom, supporting layer. Our hair model is Features Editor Cathy Lu. Open the file Cathyw/Background.tif in Photoshop. First you'll replace the shadowed background with a clean white one, which will allow you to remove this area more easily when you superimpose your Frankenstein face on a donor body. To do this, make a copy of the background layer by dragging it onto the new layer icon (the dog-eared sheet) in the Layers palette. Go to the Layer menu, select Layer Properties, and rename this layer *Cathy*.



Open the pic of your first victim in Photoshop and copy it to a new layer.

## 2. Build a Better Background

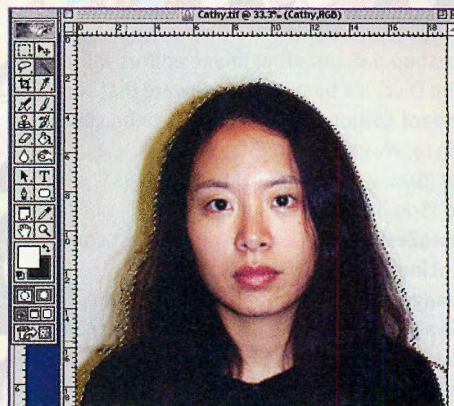
To create a clean white background, head to the Layer menu and select New, then Layer. Name the new layer *white background* in the dialog box. Click the foreground color in the Tool palette and choose white from the Color Picker. With the white background layer highlighted, select the paint bucket tool and click anywhere in the document window to fill the entire layer with white. (Hint: If you don't see the tool you need immediately, check the different drop-down menus associated with each tool in the floating palette to the left.) Drag the white background layer down in the Layers palette so it's positioned between the Cathy layer and the original background.



Use the Color Picker to select white for your new background.

## 3. Trash the Old Set

To begin removing the shadowed background, click the Cathy layer, click the magic wand in the Tool palette, and set Tolerance to 30 (you'll find this option in the contextual palette at the top of the screen). Tolerance guides how the magic wand selects pixels by determining how close in color each pixel is to its neighbor—setting Tolerance to 30 enables the magic wand to select a good range of white to off-white pixels. Hold down the Shift key (this allows you to select multiple areas), and start clicking all background areas until you've highlighted the entire white backdrop and most of the shadowed areas. Press Delete to get rid of the old backdrop. You should now see the white background in the areas you deleted, though you'll see some residual image artifacts from the previous background. That's OK—you'll get rid of them in the next step.



Use the magic wand to select and remove the old background.

## Meet Skip Goat

Now that we've created our own scapegoat editor, it's time to put him to good use. We've compiled a list of unfortunate errors printed in *MacAddict* over the years that we can pin on Skip—with a detailed excuse for how they came to be.

- **Missing dots on *MacAddict* spine.** Skip deleted the design dots from *MacAddict*'s January 1998 spine after consuming a bottle of tequila with former Art Director Ken Bousquet. He drunkenly claimed that he saw two sets of dots, so he removed the extra set.
- **Wrong price in *Sims* review.** Assuming it was a virtual-reality hardware device, Skip thought he was doing the editors a favor by readjusting the printed retail price for *The Sims* to \$2,495 in *MacAddict*'s October 2000 review.
- **Misspelling of key *Star Trek* character.** In a desire to test just how passionate *Deep Space Nine* fans were, Skip intentionally misspelled Captain Sisko's name as *Sisco* in the August 1999 *Powerplay* section.

So let me just double-check—the price of *The Sims* is \$2,495?

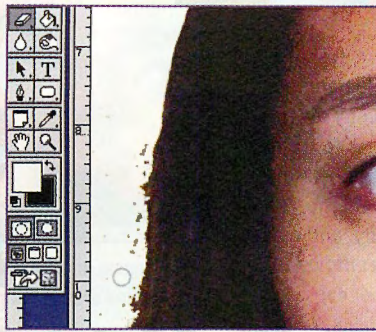


- **Aborted iBorg project.** Hijacked the iBorg (*MacAddict* iBook pet project) with a secret password to ensure it never responded to Ian Sammis's control (Skip was afraid the iBorg would soon replace him). The iBorg currently lies dormant next to Ian's feet.
- **Max's disappearance from cover.** Skip secretly hid *MacAddict*'s omnipresent mascot, Max, under a square of blue ink on the December 1999 cover, sparking redundant letter-writing and a "Where's Max?" campaign. Like a jealous sibling, Skip was envious of all the attention Max was getting.
- **Virus on The Disc.** He thought it would be fun to slip a couple of harmless viruses onto the December 1998 and January 2001 *MacAddict* discs. Yeah, that was really funny...



## 4. Clean Up the Mess

To clean up extraneous matter, click the eraser tool and select a hard (not feathered), round paintbrush at 100 percent opacity (this gives you complete coverage) from the contextual palette at the top. Brush out any offending gunk in the background, smooth out any rough edges around Cathy's perimeter, and try to remove the shadows between the flyaway hairs. Use a larger brush to clean up big, open areas and a smaller brush to clean up tighter areas. For precision removal, zoom in to see the nitty-gritty details. When you're finished, you should have a file resembling our Cathy.tif file.



Use the eraser to get rid of any unwanted image artifacts.

## 5. Place Your Face

After getting the foundation ready, we employed big cheese David Reynolds as our face model. To place his face, open the Dave.tif file. Click the lasso in the Tool palette and draw a selection around Dave's entire head. Select a good portion of his hair, as you'll need it to blend his face into Cathy's. Don't worry if you select background areas—you'll get rid of these in a moment. After you've encircled Dave's head, copy the selection (Command-C), go back to the Cathy file, and paste Dave's head into a new layer called *Dave* (Command-V).



Introduce the hair model to the face model, which you'll bring in as a new layer.

## 6. Downsize Large Entities

Compared to Cathy, Dave's got a big head—literally. You'll need to resize it to match Cathy's smaller hair frame. Click the Dave layer, go to the Edit menu, and select Transform, then Scale. While holding down the Shift key (this maintains the right proportions while you resize), reduce the bounding box by dragging any corner inward until Dave's face is the same width as Cathy's. Next, drag Dave's face over Cathy's and double-click inside the bounding box to apply the change. Save the image as a PSD file (a layered Photoshop document).



Perform a little witch-doctor maneuver and shrink Dave's head with the Scale command.

## 7. Conform Your Comrades

To blend Dave's face into Cathy's hair, add a layer mask. This provides a cushioning layer that allows you to conceal or reveal image data at will, negating any screwups. Select the Dave layer, go to the Layer menu, and choose Add Layer Mask, then Reveal All. To get rid of the extraneous matter around the face, click the layer mask in the Dave layer (the blank rectangle to the right of the image icon in the Layers palette). Choose black as the foreground color (with masks, black conceals the currently selected layer and white reveals the layer from its concealed state), select a soft, round paintbrush with 100 percent opacity, and paint around Dave's ears and beard to conceal the old background. To blend the hairlines, set the paintbrush opacity to 45 percent and zigzag through the seam.



Working with the layer mask, use black paint and a paintbrush to erase everything except the face.

## Quick Fixes

**F**acial features drawn from an assortment of people will no doubt spawn variations in skin coloring, feature size, spacing, and alignment. If you can't get certain body parts to work together, try these workarounds.

### 1. An Eye for an Eye

Covering one set of eyes with another can be tough. If you're having problems getting them to look right, place each eye individually. Use the Scale command to make eyes bigger or smaller to fit the face in which you're placing them. To reorient unaligned eyes caused by a head tilt, select Transform, then Rotate from the Edit menu. Always select enough skin around your desired eye sample to conceal the underlying eyes. If you still have trouble concealing what's underneath, use the clone tool (the rubber stamp) to paint over the face layer's eyes by sampling the surrounding skin.

### 2. Wayward Brows

When it comes to eyebrows, you can either use just the eyes or select the brows to go with them. If you choose the latter, be aware of where the underlying brows are when you blend the seams, or you may expose a brow cutting through an eyelid or end up with double arches. If you need to erase skin that conceals an underlying brow, first get rid of the brow on the face layer using the clone tool.

### 3. Color Harmony

The face layer determines the skin tone for your creation. Any body part you add to it needs to match its tone. Use Levels and Curves to fine-tune complexions, along with Color Balance and Hue to match tones. If you're pasting a face into a frame with a different hair color, mask out the entire hairline of the (top) face layer and blend the skin into the underlying layer's skin. Use 50 percent or less opacity to blend seams.

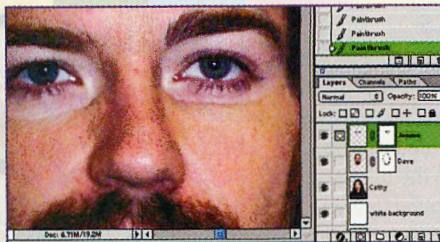
### 4. Match Moods and Parts

The underlying face affects how well your eyes and mouth fit into the puzzle. Use pictures where the subjects have the same expression so the features work well together. If a smile is the perfect thickness, but not wide enough to conceal the underlying mouth, widen it with the Scale command. Use the Skew command (under Edit, select Transform, Skew) to raise or lower mouth corners to get the expression you want. Distort (also located in Transform) can mold any feature to your liking.



## 8. Pop in the Peepers

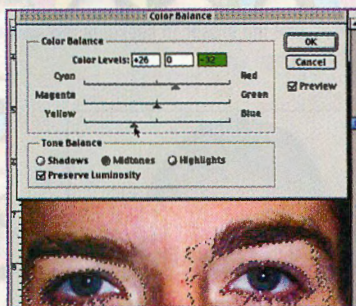
We like Managing Editor Jenifer Morgan's expressive eyes, so she'll serve as our ocular DNA. Open the JenMo.tif file and use the lasso to draw around her eyes and eyebrows. Copy the selection, go back to the Skip file, and paste her eyes into a new layer named *JenMo*. Create a layer mask and position JenMo's eyes on top of Dave's. Click the JenMo layer mask, set the paintbrush to a soft black with a 100 percent opacity, and erase the bridge of JenMo's nose and the areas above her brows, preserving her eyelids and the areas underneath her eyes.



After bringing in the eyes, erase any extraneous skin between and around them using a layer mask.

## 9. Assimilate Skin Tones

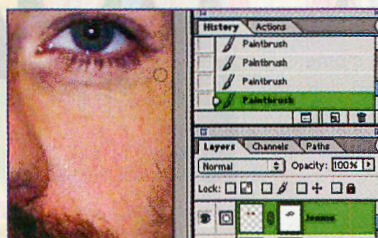
JenMo's skin has more blue tone than Dave's yellowish-red shading, so you'll need to match her tone to his. Click the JenMo image layer (not its mask counterpart); using the magic wand, select all skin areas beyond the eyes. With all skin areas highlighted, go to the Image menu and select Adjust, then Color Balance. In the dialog box, use the sliders to add more yellow and red until the skin tone blends with Dave's. (Use the settings in the screen shot at right as a guide.)



Use the Color Balance box to match one skin tone to another.

## 10. Hide the Evidence

To finish off the blending of JenMo's eyes into Dave's face, click the JenMo layer mask and select a soft, small, round paintbrush with an opacity of 45 percent (use black as the foreground color). Using short strokes, brush around the remaining skin surrounding the eyes until the seams disappear. If you erase too much while painting on a layer mask, switch the foreground color to white, set the opacity to 100 percent, and brush the erased areas back in. Note: Dave's brows are set lower than JenMo's; be careful when blending around the outer corners of JenMo's eyes, or a fuzzy caterpillar may suddenly appear to crawl across one eyelid. (See "Quick Fixes," p39, for a few workarounds.)



Hide seams by zigzagging through them with a semi-opaque black paintbrush on the layer mask.

## 11. Get Nosy

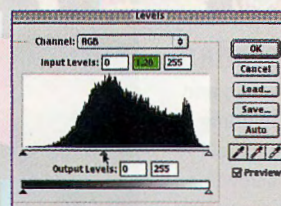
Next, we'll sniff out Disc Editor Andrew Tokuda to donate his schnoz. Open the Droo.tif file and use the lasso to draw around his nose from bridge to tip. Copy the selection, go back to the Skip file, and paste the nose into a new layer named *Droo*. Because you sized Dave's face down to mesh with Cathy's hair and Droo's head is as big as Dave's, you need to reduce the nose size. Use the same process described in step 6 to resize the nose until it's roughly the same width as Dave's.



Give the new schnoz a nose job using the Scale command.

## 12. Assimilating Skin, Take Two

Droo's skin tone is darker and more olive than Dave's, so again you'll need to do some color matching. To lighten the nose, click the Droo layer, go to the Image menu, and select Adjust, Levels. In the Levels dialog box, move the gray (middle) slider to the left until the complexions are equal. Then use the Color Balance feature to add a little blue. Align the bottom of Droo's nose with Dave's and position it so Dave's moustache lines up with the middle of Droo's nose. Create a layer mask and use a black paintbrush at 45 percent opacity to blend the new nose with Dave's face—don't forget to uncover the whiskers underneath the nostrils.



Lighten darker complexions by moving the gray slider to the left.

## 13. Get a Mouthful

Finally, give Skip some lip with a mouthful of a name—Narasu Rebbapragada, *MacAddict's* news editor. Open the Narasu.tif file and use the lasso tool to corral her lips. Copy the selection, go back to the Skip file, and paste the mouth into a new layer. Name this layer *Narasu* and create a layer mask for it. Narasu's mouth is the same width as Dave's, but her lips are fuller, causing them to overlap parts of Dave's beard and moustache slightly. No worries—you can digitally trim Dave's whiskers to make the varying lip size work. Click the mask layer and—using the paintbrush set to 100 percent opacity—erase all of Narasu's skin right down to the lip line.



Using a layer mask and a black paintbrush, erase all skin surrounding the lips.

## Are You Scared Yet?

Why stop at just one mutant? Expand the army by rolling the dice with varying combinations of features. Some concoctions will look surprisingly human, while others may turn out just plain scary. Here's a sampling of some of our other scapegoat candidates—can you guess the recipe for each face?

### Mutant Editor 1



Oh, screw you if you don't like my attitude!

### Mutant Editor 2



Yeah, I'm Jack's brother... you know, from *Will and Grace*?

### Mutant Editor 3



If you need me, I'll be in my room, reading Poe and listening to Bauhaus.

### Mutant Editor 4



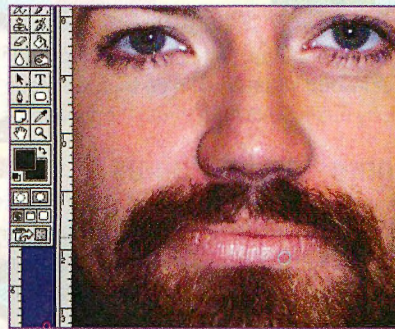
Yo, Tony! Park da car 'round da corner and wait for da signal.

THE ANSWERS:  
Mutant 1—Narasu's head, Cathy's face, Dave's eyes, Chris's nose, JenMo's mouth.  
Mutant 2—Chris's head, JenMo's face, Narasu's eyes, Dave's nose, Droo's mouth.  
Mutant 3—Cathy's head and face, JenMo's eyes, Narasu's mouth.  
Mutant 4—Former Art Director Dave Ross's hair and face, Narasu's eyes, Chris's nose, Droo's mouth and chin.



## 14. Give a Close Shave

Position Narasu's mouth so that her bottom lip is even with Dave's. Then use a small, soft, round paintbrush at 100 percent opacity and carefully erase parts of Narasu's upper lip on the mask layer to reveal Dave's meandering moustache. Be discreet in how much you reveal—we're going for a clean trim. To make the lips appear as if they belong on the face, select the burn tool (it looks like a thumb and forefinger forming an O), which darkens the exposure. Set it to a small, soft, round brush with a 33 percent exposure over the midtones. Select the layer—not its mask—and use tiny strokes to add depth to the corners of the mouth, underneath the moustache hairs along the top lip, and along the bottom edge of the lower lip. When you're finished, go to the Layer menu and select Flatten Image to flatten the layers. Save Skip as a TIFF.



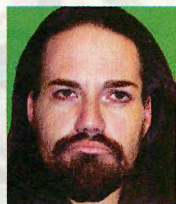
Use the burn tool to paint in faux shadows—this makes the lips appear as if they really are under the moustache.

## 15. C'mon, Get Happy

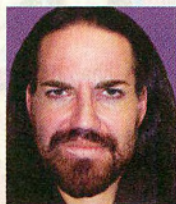
You now have the recipe for creating a new friend. We suggest putting him or her through a range of emotions by taking each individual expression you shot and repeating steps 5 through 14 to build different dispositions.



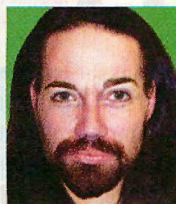
Happy



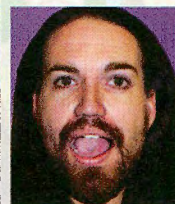
Sad



Pissed



Stressed



Surprised

## If You Want My Body...

A head shot will only go so far if you want anyone to fall for your little scheme—for more credibility, a full body assault is in order. When we needed a donor body to give our Frankenstein masterpiece some legs, Technology Editor and closeted bad boy Ian Sammis was kind enough to lend us his.

### 1. Head to Head

Open your newly created Skip.tif file, select the entire image (Command-A), and copy it. Open the Ian.tif file and paste Skip into a new layer. Remove Skip's background by clicking the white region with the magic wand and pressing Delete.

Introduce Skip to his new body by copying and pasting him into the body shot.



### 2. Put Your Head on My Shoulder

Reduce Skip's head to the same size as Ian's with the Scale command (as described in step 6, p39) and place the head squarely on Ian's shoulders. Expose just the top of Ian's flyaway hair to give Skip's hair some movement.



Scale Skip's head down to match Ian's body or he'll resemble a bobble-head doll.

### 3. Blend the Bodies

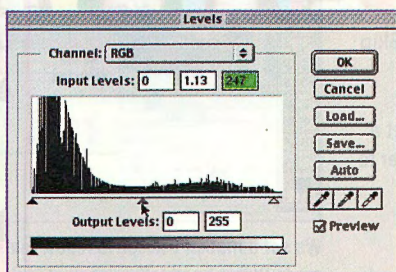
Create a layer mask for the Skip layer, select a small, feathered paintbrush at 45 percent opacity, and remove the area below Skip's neckline until it blends with Ian's shirt collar. Don't forget to erase some of Skip's hair (change the paintbrush opacity to 100 percent first) to expose the motorcycle handlebars.



Conceal parts of Skip's head to uncover elements in the underlying photo for more believability.

### 4. Let the Sun Shine

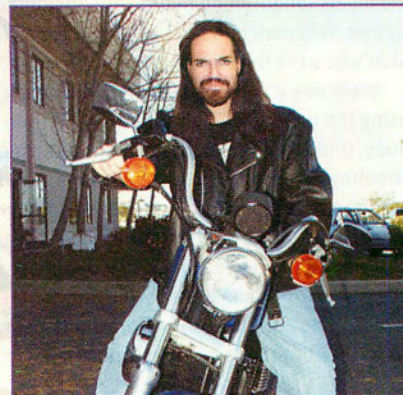
Switch to the image layer and match the lighting of Skip's face with the lighting in the photo. Sunlight contains some blue tones, so add a little cyan in Color Balance and lighten Skip's complexion using Levels.



Edit the coloring in Skip's face to make it look sunlit.

### 5. Get into a TIFF

Once the perspective and blending look right, select Flatten Image from the Layer menu and save the new image as a TIFF. You now have an almost-real person in your midst.



The final result: Skip's pissed-off expression coordinates with the tough-guy stance.



# Face-to-Face Interaction

Now that Skip's a freestanding, self-supporting individual, it's time to further prove his existence by placing him in real-world situations. To do that, we made sure Skip was in attendance at our last editor's meeting by pulling this little Photoshop maneuver.

## 1. Snap Some Family Photos

The first step is to take pictures of potential situations, making sure to leave empty spaces for your fake person. We took a picture of the staff around the couch, but left a place open for Skip. We also took a separate picture of Ian sitting in a chair to serve as Skip's body.

We combined a picture of Ian and this one of the staff surrounding a vacant seat.



## 2. Sit Up

Use the lasso tool to select Ian sans the chair from ian-chair.tif, then copy and paste him into the staff photo (staff.tif). Flip Ian's image horizontally (under the Image menu, go to Rotate Canvas and select Flip Horizontal) so that he sits better on the couch. Mask out his backdrop and paint in corresponding shadows using a 15 percent opaque black paintbrush to add authenticity.



Ian sits across from himself in the group photo.

## 3. Now Tilt Your Head and Smile

We liked Skip's "surprised" image, so we copied and pasted that one into the staff photo. As final touches, you need to scale down Skip's head, tilt it a bit using the Rotate command to fit Ian's body posture, mask out the background, and adjust the color (desaturating it, adding a bit of green and yellow, and lightening the levels to match the lighting in the room). Voilà—a meeting of minds (or lack thereof).

Plp Skip's head onto Ian's body and tweak the color and levels to match the surroundings.



## It's Alive!

If you're really determined, and you have a video camera and video-editing software, you can make your subhuman superhero come to life on film. We recommend using software that supports motion tracking, like Pinnacle Systems' Commotion Pro (\$995, [www.pinnaclesys.com](http://www.pinnaclesys.com)), for automation and less frustration. (Final Cut and Premiere will work, but you'll need to make adjustments frame by frame.) If you really want to make your video look natural (we were too lazy, so ours looks like a walking billboard), you may need to add light effects and shadows, as well as paint in hair movement. Here's an overview of how we did it.

We videotaped Ian walking through the parking lot and then imported the clip into Commotion. Next, we prepped our Skip.tif file by painting out his shoulders with white—leaving just his head, neck, and hair for our composite work. We also adjusted the levels (brightening midtones considerably) and color balance (adding more cyan) so that Skip matched the lighting in Ian's video. After using Photoshop to reduce Skip's head to the size of Ian's in the video, we imported Skip.tif into Commotion.

We made a composite of the two files, eliminated the white background from Skip using the luminance-key settings, and then rotated and resized his head for Ian's body. (Video-editing software uses a technology called *chroma-keying*—that is, shooting against a bluescreen—to mask out unwanted areas in a clip.) We then set a motion tracker to follow Ian's head as he lumbered by and then applied this tracker to Skip's head. Once set in motion, Skip's head followed Ian's body.

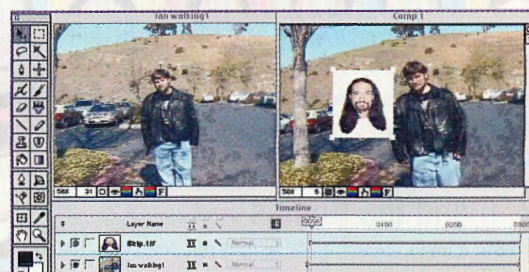
Without extra tweaking, the video resembles a walking body with an attached floating head. To make everything appear real, you need to do a good amount of rotoscoping and fine-tuning (proximity perspective, head tilts, fleeting shadows, and so forth)—but that's another article.

Kris Fong is actually *MacAddict's* first fake editor and has done a good job at fooling everyone for the past three years.

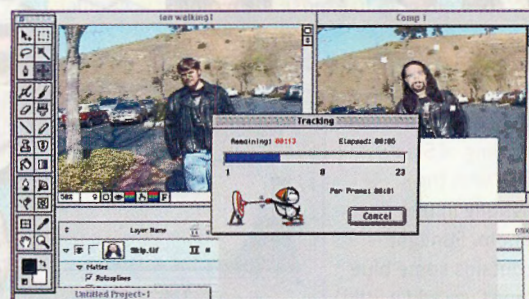
## Proof of Life

For most people, seeing is believing. But if you want to offer further documentation of your alter ego's existence, try some of these tactics.

- Create a persona and history for your companion and build a Web page showcasing his or her many accomplishments.
- Set up an email account for your "friend" and pass the address to your cohorts so they can keep in touch.
- Substantiate a home address by requesting mail-order catalogs under your friend's name. In a few weeks, he or she will receive bunches of mail and quite possibly a few credit-card solicitations (no, don't go there!).
- Buy an answering machine or service with more than one voice box. Use Alan Glenn's SndSampler sound-editing software (\$30, [www.geocities.com/SiliconValley/Garage/9373](http://www.geocities.com/SiliconValley/Garage/9373)) to record and modify your own voice for your friend's greeting.

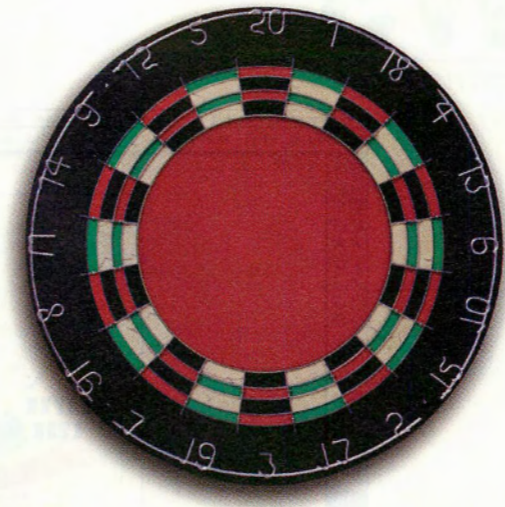


After videotaping Ian as he strutted his stuff, we imported Skip's head using Commotion Pro.



We set a motion tracker to follow Ian's nose; Commotion then made Skip's head follow each of Ian's steps.





## YES, IT IS THIS EASY.

**At REAL Software, we like it simple.** Take our award-winning product, REALbasic, for example. People call it the powerful, easy-to-use tool for creating their own software for Macintosh, Mac OS X and Windows. We call it a problem solver. You've probably said, "Wouldn't it be great if there was a little application that...." REALbasic fills that blank.

It's powerful and easy to use. Beginners and professionals alike can build software using a single, simple design. REALbasic compiles native applications for Macintosh, Mac OS X and Windows without requiring any platform-specific adjustments. Each version of your software looks and works just as it should in each environment.

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Complex problems shouldn't require complex solutions. The answer is REALbasic.



Download a free demo. [www.realbasic.com](http://www.realbasic.com)



# reviews

Brought to you by the words yea and nay.

## FreeHand 10

### design & graphics

**Company:** Macromedia

**Contact:** 800-457-1774, [www.macromedia.com](http://www.macromedia.com)

**Price:** \$399 (SRP), \$129 upgrade

**Requirements:** Power Mac, Mac OS 8.6 or later, 32MB RAM (64MB recommended), 70MB free hard disk space, 800 by 600 screen resolution, CD-ROM drive



**FREAKIN' AWESOME!**  
The most valuable products, the coolest gizmos.



**SPIFFY**  
A solid offering. Overall a good investment.



**YEAH, WHATEVER**  
Neither recommended nor rejected. Some might like this, but we weren't impressed.



**BLECH!**  
Give us back the time we spent testing this.



Find a FreeHand 10 trial on The Disc.

To Illustrator or to FreeHand, that is the question. While many graphic designers sated by Adobe Illustrator may resist change, FreeHand 10's new and enhanced features—such as a Contour Gradient tool, a Symbol Library, and new brush strokes—might just be enough to convert even the stodgiest of artists.

FreeHand, like Illustrator, is a vector-based drawing program that provides a comprehensive environment for drawing professional illustrations, logos, icons, and other graphics that you can edit and scale. Pro Illustrators and doodlers alike can create everything from Web-based graphics to photo-realistic illustrations.

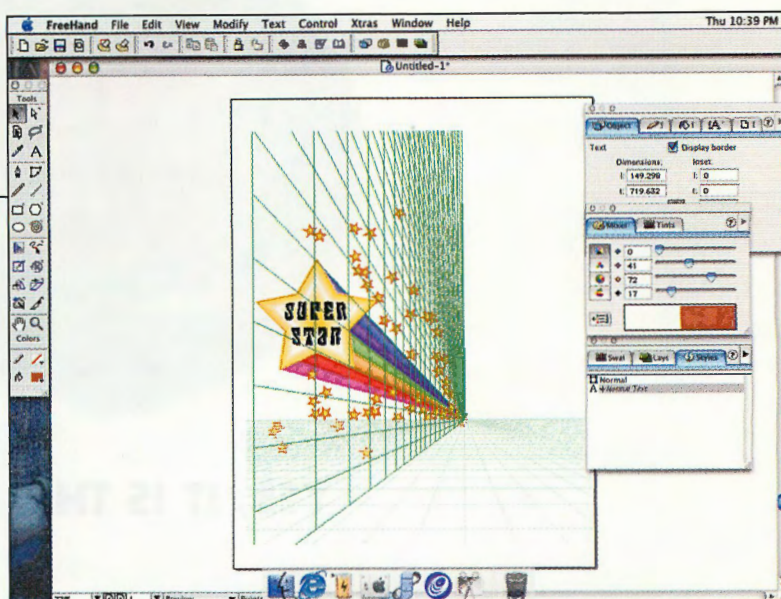
For Mac OS X users, here's the good news: FreeHand 10 works like a dream on the new OS. It's faster (on a G4), slicker, and crashes less frequently. We didn't come across any noteworthy bugs under Mac OS X, either. The bad news: It's sluggish on G3 systems, due to Mac OS X's need for power.

One of FreeHand 10's most exciting new features is the Contour Gradient option—part of the Fill Inspector—which allows designers to create bevels and fills with near-Photoshop-quality precision. And our

favorite, the Envelope feature, allows you to distort text to fill almost any shape—you won't find this feature in Illustrator.

FreeHand 10 also offers tools geared toward small design firms looking for an all-in-one production solution. Its Master Page features—you can find similar tools in QuarkXPress—allow you to set up templates, making it easy to create page attributes for use across multiple pages. You can also export multiple-page PDF documents; Illustrator only allows single-page exports.

Some features facilitated our artistic skills. The Perspective Grid brought us back to the days of sketchpads and number 2 pencils—trying to determine a vanishing point with proper perspective was not exactly our strongest suit in design school, but the Perspective Grid enabled us to easily place objects on its 3D grid with multiple vanishing points already set up. Creating tunnel vision has never been simpler.

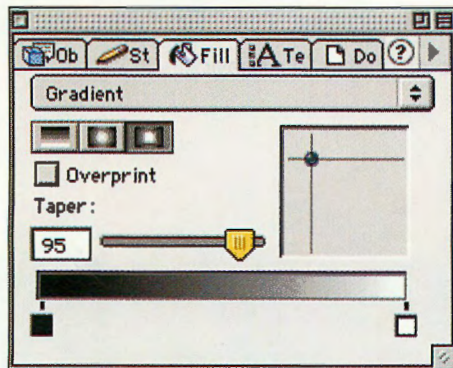


FreeHand 10 features some great tools, like the Perspective Grid, that make drawing easier.

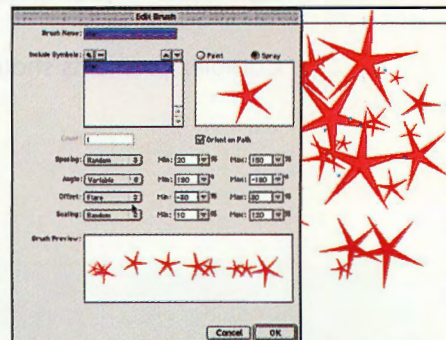
The new Symbol Library makes editing a collection of spawned graphics easy. You can create a graphic (the parent symbol), store it in the Library, and then use it multiple times (instances) in a project. You can universally edit all instances via the parent symbol in the Symbol Library. If you import FreeHand instances into Flash, the parent symbol follows, maintaining the relationship between the symbol and its instances. This is a veritable coup for Flash animators, who will benefit from FreeHand's powerful graphic output.

The newly enhanced, editable Spray and Brush strokes impressed us—these allow you to add an instance or a series of instances along a path and control their behavior. Editing the entire path is a snap.

While Macromedia has long had some of the most powerful tools in the business, generally you can classify its user interfaces as somewhere between a bad joke and a bad

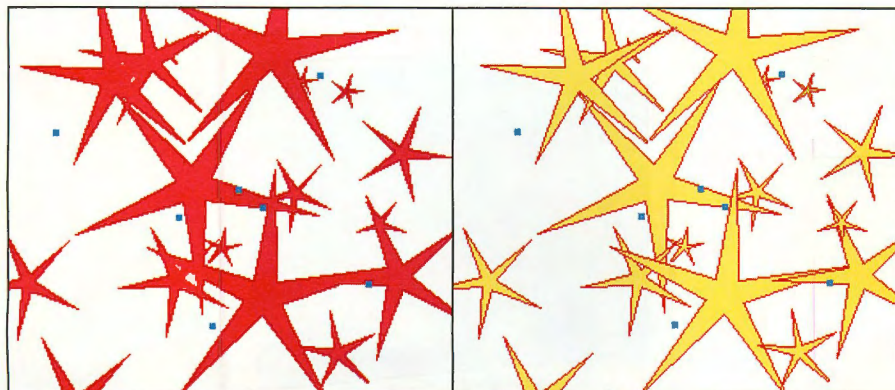


The Contour Gradient tool allows users to create sophisticated gradients, fills, and bevels.



Filling the heavens with stars is easy—create a path and spray it using a star from the Symbol Library.





**Making universal changes is a piece of cake with the new Symbol Library. We transformed the fill color of all these stars by changing just one symbol.**

dream. The good news is that the company is leaping. Taking a cue from Adobe, Macromedia adopts a more consistent interface across Dreamweaver, Flash, and FreeHand, and cleans it up considerably—this promises to make transitioning between the apps a lot less painful. FreeHand's pen tool now actually looks like...well, a pen. When drawing Bézier curves, you finally have an actual pen and pointer as opposed to the awkward crosshair found in previous versions.

Despite its advances, the interface still has plenty of room for improvement. We hate having to double-click a tool to change its behavior options—perhaps because we're used to Photoshop. Even more ridiculous is the fact that after you make your changes, you have to close the Options window before you can draw again. This makes tweaking a tool to produce a desired effect extremely difficult, as you have to continually return to the toolbar, double-click the tool you want, change the settings, close the window, draw, and—if you still don't get it right—delete your work and start all over again. An ever-present options palette would serve our needs much better.

While many of the new features are quite impressive, some are less so. One good example is Flash compatibility. You can create and script Flash animations in FreeHand, then export them for use independently or in other Flash movies. Unfortunately, FreeHand's Flash animation abilities ran out of steam pretty quickly (no animation timeline?!), causing us to

abandon FreeHand's impotent interface for Flash's more robust one.

One feature we would have liked to see (added to Illustrator 9 and available in QuarkXPress for years) is the ability to define the size of your drawing board when you open a new file. In FreeHand 10, you have to redefine the page size in the Document Inspector *after* creating the page, which is a little annoying.

We also found FreeHand's keyboard shortcuts frustrating—they don't all conform to the shortcuts in other Macromedia applications. Our familiarity with Flash caused us to inadvertently engage unwanted FreeHand functions or wonder why we couldn't engage a function (for example, Command-L opens the Library in Flash, but not in FreeHand, where you'd use F11).

Despite these failings, FreeHand 10 is a robust app and a worthy upgrade for Web designers (especially Flash designers, who will find much better drawing tools in FreeHand than in Flash), print designers, and illustrators seeking a simple solution for all their production needs. Its unique new features and great enhancements might raise quite a stir in Illustrator's avid fan base.

—Jude Higon and Amy Wybo

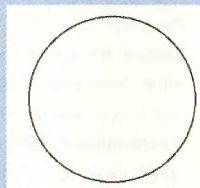
**good news:** Contour gradients. Symbol-based Brush and Spray strokes. Better compatibility with Flash.  
**bad news:** Weak Flash animation features. Interface not very user friendly.



## Warp Your Words

**F**reeHand's Envelope feature is a fun way to add pizzazz to your text. Here's how to apply envelopes to great effect:

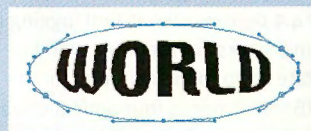
**1** Under the Window menu, select Toolbars, then Envelope to display the Envelope toolbar. Next, select the Ellipse tool from the toolbar and create a circle on your page. Copy the path by selecting it and pressing Command-C.



**2** Next, create some text by selecting the text tool from the toolbar, clicking your work stage, and typing anything. Select your text by clicking it once.



**3** With your text selected, paste the ellipse's path on the text as an envelope by choosing Envelope from the Modify menu and selecting Paste As Envelope.



**4** Click and drag a vertice on the envelope to warp the text. For better control of Bézier curves, from the Modify menu, select Envelope, then Show Map.



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## iBook

### hardware

**Company:** Apple

**Contact:** 800-692-7753, [www.apple.com](http://www.apple.com)

**Price:** Combo Drive, \$1,799; CD-RW, \$1,599; DVD-ROM, \$1,499; CD-ROM, \$1,299

**Specifications:** 500MHz G3, 256K L2 cache, 128MB SDRAM (64MB SDRAM on CD-ROM model), 10GB Ultra ATA drive, 12.1-inch TFT XGA display, 8MB video memory, 10/100Base-T Ethernet, 56-Kbps internal modem, optical drive (see configurations above)

**W**hile the new iBook commercial makes us absolutely cringe (can someone please slap that obnoxious guy on the airplane upside the head?), the new line of iBooks is anything but cringe inducing. If the TiBook has you drooling but concerned about your bank account, the iBook will certainly satisfy most Mac users in performance as well as price.

The iBook has grown up. Gone is the arguably goofy and sometimes fruity clamshell; in its place you'll find a sleek, more-sophisticated polycarbonate body just a tad bigger than a stack of five *MacAddict* magazines (11.2 inches wide by 9.1 inches deep by 1.35 inches thick). And its mere 4.9 pounds means that lugging it around in a backpack for hours won't necessitate a trip to the chiropractor.

The iBook comes in four optical-drive configurations (listed above). Tech specs are the same across the line with the exception of the CD-ROM model, which ships with 64MB of SDRAM as opposed to 128MB (it's a good idea to spring for extra RAM regardless of which model you choose, especially if Mac OS X is your calling). The Combo Drive model (the unit we reviewed) features a combination CD-RW-DVD-ROM drive, making it an incredibly versatile machine. All iBooks feature two USB ports, one FireWire port, 16-bit audio out, built-in



PHOTOGRAPHY BY W. B. JONES

### Finally, an iBook we're not embarrassed to carry in public.

stereo speakers, built-in microphone, VGA and composite video out, 1,024-by-768-pixel resolution support, 5-hour battery life, and an ATI Rage Mobility 128 graphics accelerator.

The iBook currently ships with Mac OS 9.1 and Mac OS X. However, with its G3 processor, trying to accomplish anything in Mac OS X was a test in patience—simple tasks took twice as long to process in X than in Mac OS 9.1, and navigating through X's interface was a click-and-pause affair. In Mac OS 9.1, interaction and performance was snappy. You'll find iMovie 2, AppleWorks 6, iTunes, Bugdom, Netscape Communicator, Outlook Express, Palm Desktop Organizer, and other bundled software to keep you busy.

Apple boasts a 5-hour battery life—this may be true if you power up the iBook and leave it sitting idle. But if you actually use it, expect your actions to take a toll. We squeezed in a little over 3 hours of intensive Word work before our iBook died. However, we were left hanging when our iBook only

packed enough juice to play 2 hours of *Crouching Tiger, Hidden Dragon*, leaving us without an ending until we plugged the machine into an AC outlet. A word to the wise—if traveling with battery alone, bring a DVD with a runtime of 2 hours or less. Still, battery life is above average compared to that of other laptops and older iBooks.

The built-in stereo speakers are a welcome feature, but they sound as thin as a dime—plug in headphones for better-quality sound. Although the iBook now includes a built-in mike, it lacks a direct audio input—bad news for desktop musicians. It does, however, support audio via USB, should you have USB audio gear.

If you want to connect to the wireless world, the iBook comes AirPort ready (card and Base Station sold separately). Installation is easy, though we were both amused and alarmed when the F1 key decided to take a solo flight onto our carpet as we lifted the keyboard to install the card.

Though we won't abandon our G4 when it comes to serious video, audio, and image editing, the iBook makes our everyday workload manageable anywhere we go and is truly an awesome companion.—Kris Fong



Ports aplenty for all your peripherals.

**good news:** Incredibly small and lightweight. Digestible prices for the budget conscious. Sleek exterior.  
**bad news:** No direct audio in. Mediocre speaker quality. Battery may leave DVD movie viewers hanging.



**freakin' awesome!**



# RumbleFX 3D Sound Amplifier

## hardware

**Company:** Evergreen Technologies

**Contact:** 541-757-0934, [www.evergreennow.com](http://www.evergreennow.com)

**Price:** \$79.99 (MSRP), \$50 to \$60 (street)

**Requirements:** Any Mac with a stereo minijack audio out, set of speakers or headphones

If you're hearing pitter-patter instead of booming rocket fire in Unreal Tournament, or your Metallica CD gives you the dentist-drill willies, you could buy better speakers—or consider the RumbleFX 3D Sound Amplifier. While it won't turn shoddy speakers into a home-theater system, it will make OK speakers sound incredible. And though the price tag may raise some eyebrows, so will the sound this little device can produce.

**The RumbleFX delivers big sound in a small device.**

The RumbleFX, which connects between your Mac and two speakers, amplifies the stereo signal from your Mac's audio out (cable included), then processes it using SRS's WOW and TruBass technology. WOW creates a simulated 3D sound effect that widens the stereo field signal and boosts high and low frequencies over any two-speaker system—a great enhancement for gamers. TruBass pumps more bass into your speakers, sans subwoofer.

The device features wheel controllers for both WOW and TruBass, so you can tailor the effects to your liking. Six audio connectors stud the back—two sets of stereo RCAs for input and output, a stereo minijack in, and

an amplified minijack out. You'll also find a volume control and a headphone jack.

We already had good computer speakers, but once we hooked up the device, we were amazed at how much wider a frequency range our speakers could punch out, and we got clearer sound, with better bass.

If a sound card or speaker investment isn't on your horizon but better audio is, the RumbleFX 3D Sound Amplifier is thunderously impressive.

—Kris Fong

**good news:** Impressive sound. Simulated 3D audio makes games more enjoyable. **bad news:** Pricey.



PHOTOGRAPH BY W. B. JONES

# Pioneer DVR-A03

## hardware

**Company:** Pioneer

**Contact:** 800-421-1404, [www.pioneerelectronics.com](http://www.pioneerelectronics.com)

**Price:** \$995 (MSRP)

**Requirements:** Power Mac G4 with a 5.25-inch drive bay, Mac OS 9.1 or later

Apple made history by offering the first computer with a DVD-R drive preinstalled (the SuperDrive-equipped Power Mac G4/733). The drawback? A \$3,500 price tag. Thankfully, Pioneer now offers the same DVD-R drive as a stand-alone device, so you won't need to buy a new computer just to burn DVDs.

The DVR-A03 is an internal disc burner that writes to four formats: CD-R, CD-RW, DVD-R, or DVD-RW. Once installed, it's ready to go...sort of. The drive, which works only with DVD Studio Pro and Toast Titanium, comes with Windows software—not surprising, considering that DVD Studio Pro (a \$999 program) is far too costly for

**Now you don't need a new G4 to make DVDs.**

Pioneer to bundle. This limits the drive's use to professionals, the rich, and those who are carefree about credit-card usage.

Under Mac OS X, the drive only works for CD burning—no DVD application was compatible with OS X at press time (we'll have to wait for Apple to make DVD Studio Pro work with Mac OS X).

Compatibility issues aside, the drive works well—we created a television-viewable DVD using DVD Studio Pro, and we used Toast to write and rewrite to DVD-RW and CD-RW and create a music CD. The 2X write speed for DVD-R is slow but tolerable. However, the 8X write speed for

CD-R burning seems far too sluggish compared to current CD-RW drives.

The DVR-A03 drive is a dream for video pros who want to create DVD discs but don't want to buy a top-of-the-line G4 to do so. If DVD is essential to your business, get this drive. If you can wait, cheaper and faster drives will likely appear in the future. —Andrew Tokuda

**good news:** Meets all major optical-storage needs. Allows creation of consumer-compatible video DVDs. No drivers required. **bad news:** No Mac software included at this time.



PHOTOGRAPH BY W. B. JONES





## Centipede

### fun & games

**Company:** MacSoft

**Contact:** 800-229-2714 or 425-398-3051,

www.wizworks.com/macsoft

**Price:** \$19.99 (SRP)

**Requirements:** G3 or faster, Mac OS 8.6 or later, 64MB RAM, 4MB VRAM, 60MB hard disk space, CD-ROM drive

**Y**es, you read that right—Centipede is back. The game, now about as venerable as anything in current release (if it were human, it could legally buy drinks), has returned as an up-to-date, OpenGL-based 3D shooter that—despite minor flaws—should satisfy even the itchiest trigger finger for hours.

Centipede is actually three games in one—Arcade, 3D Arcade, and Adventure. To their credit, the game designers included the original 1980 Centipede as the Arcade variant. This version's gameplay is extremely simple (as you'd expect from a game that sucked up quarters before many of you readers were born). A multisegmented centipede starts at the top of your screen and meanders down through a random assortment of mushrooms. Your goal is to terminate the buggie by shooting at it with your ship, which hovers toward the bottom of the screen, before the centipede reaches you. A direct hit will destroy a single segment, usually splitting the rest of the monster into two independent centipedes. When you kill the entire centipede and all of its spawnings, the next level (with different-colored mushrooms and a faster centipede) follows immediately. If you want something a



**The Adventure version departs sharply from the traditional game, although the basics (throbbing pulse and loud cursing when you die) remain.**

tad more up-to-date, the 3D Arcade game provides very similar gameplay, but with OpenGL 3D graphics.

For more inspiring gameplay, check out the Adventure game, the meat of the new Centipede. In this variant, your ship (the shooter) is far more maneuverable than in the other variants—you can turn, strafe, jump, and deploy two different weapons. In each of the 30 levels, you are assigned tasks, such as saving people from the bugs and recovering treasures. If deemed worthy, you win bonus points at the end of the level. The levels span six worlds that provide a variety of opponents and missions, and two players can play at once—either over a network connection or on the same machine (using a split screen).

Unfortunately, the Adventure game's added complexity creates new problems. Jumping accurately is difficult—the shooter has a tendency to overshoot. Worse, a number of glitches caused us to get stuck—

we often found ourselves immobilized on a slope or blocked from the centipede by a solid wall. The end-of-world bosses are particularly annoying—they show no signs of progressive damage until destroyed, so fighting them feels less like a battle and more like kicking a rock. Also, the game's interface navigation is unusually counterintuitive—even figuring out how to return to a paused game is a bit confusing (press Escape twice, folks).

Despite its flaws, Centipede retains the simple, pulse-pounding gameplay that has carried it into its third decade of existence. While it's hardly the best game on the market right now, Centipede is cheap, addictive, and highly entertaining.—*Ian Sammis*

**good news:** Highly addictive. Adventure mode adds interest to the game. **bad news:** Questionable interface. Ship can become trapped in Adventure mode.



**The familiar (if you're older than about 25) Centipede is only the beginning.**



**If you want roughly the same game but don't want the reminders of Pac-Mac Fever, you can play a 3D rendition of the classic.**



**Well, that's it—the shooter can't move and can't die. Time to restart the level—don't you wish the original designers had done a bit more work?**



# webSavant Guide for Newbies

## infotainment

**Company:** webSavant

**Contact:** 630-515-9550, [www.websavant.com](http://www.websavant.com)

**Price:** \$39.95 (SRP)

**Requirements:** Power Mac, Mac OS 7.5 or later, 12MB RAM, 5MB free hard disk space, 800 by 600 monitor resolution, QuickTime 3 or later, 4X CD-ROM drive

When our mail guy dropped webSavant Guide for Newbies on our desk, we heard snickers from passing coworkers. Though carrying around a CD that screamed "newbie" made us feel a bit sheepish, we were indeed novices in the land of Web authoring. But thanks to webSavant, we're newbies no more.

The two-CD Guide for Newbies includes everything you need to build Web sites. One

Helpful instruction is what you'll find—head-scratching programming lingo is what you won't.

CD contains QuickTime tutorial movies that demonstrate how to create Web pages using Netscape Composer, a WYSIWYG editor. The other CD provides the software featured in the tutorials, as well as demos of other recommended apps.

The tutorials offer a wealth of info, taking you through planning, building, and linking Web pages, creating tables and templates, designing graphics and buttons, importing photos, building GIF animations, getting your site online, and more.

Guide for Newbies has a couple minor annoyances—some sprite errors sprang up

during play, though nothing actually locked up our Mac, and the Scan/Search slider isn't effective.

If Web design is unfamiliar territory that you want to conquer, webSavant Guide for Newbies will guide you through it with a wealth of information—and make the journey enjoyable.—Kris Fong

**good news:** Incredibly thorough lessons. Packs in good advice. Doesn't cater to wallet-gouging apps.  
**bad news:** Sprite errors. Controller quirks.



# iView MediaPro 1.0

## multimedia

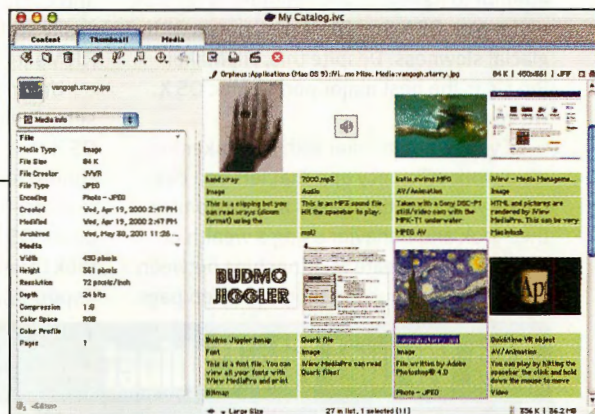
**Company:** iView Multimedia

**Contact:** 415-449-3450, [www.iverview-multimedia.com](http://www.iverview-multimedia.com)

**Price:** \$90 (SRP), \$45 (download)

**Requirements:** Power Mac, Mac OS 8.6 or later, 8MB RAM, 2MB free hard disk space, QuickTime 4.0 or later

iView MediaPro's single-window interface makes mastering your media files easy.



Embracing the digital lifestyle is exhilarating—until hordes of media files start to run amok on your hard drive. Here to help is iView MediaPro. Like a librarian on your desktop, iView MediaPro enables you to create custom catalogs for almost every photo, illustration, audio, and movie file you have for better organization (it supports most major file formats), and it doubles as a media-presentation browser and player.

Building a catalog is a breeze: We dragged a folder onto the catalog window, and MediaPro quickly created thumbnails of all files. Unfortunately, the program ignored our subfolders in the process, combining all

the files into one catalog without regard for hierarchy. You can organize your media into hierarchical groups using Catalog Sets, but setting them up can be a pain.

Within the interface, you can view and play back cataloged files, add text captions, record voice annotations, and perform simple image-editing tasks. We found the detailed information provided for each file—such as a GIF's color depth or the codec used in a QuickTime movie—invaluable. The program also supports ColorSync, AppleScript, and IPTC annotations.

Managing files with MediaPro is a snap—we quickly sorted files and performed searches based on various

criteria, such as size, type, and author. MediaPro also keeps track of files that no longer reside on your hard drive, after you archive them to a CD or other external media.

Though iView MediaPro is Mac OS X-compatible, some features are buggy, and the included PDF manual is skimpy. However, for an inexpensive organizer, iView MediaPro is powerful.

—Mark Anthony

**good news:** Mac OS X support. Simple interface. Plenty of features for the price. **bad news:** Mac OS X support is buggy. Lame documentation.



Find an iView MediaPro 1.0.5 demo on The Disc.



# FileMaker Pro 5.5

## productivity

**Company:** FileMaker

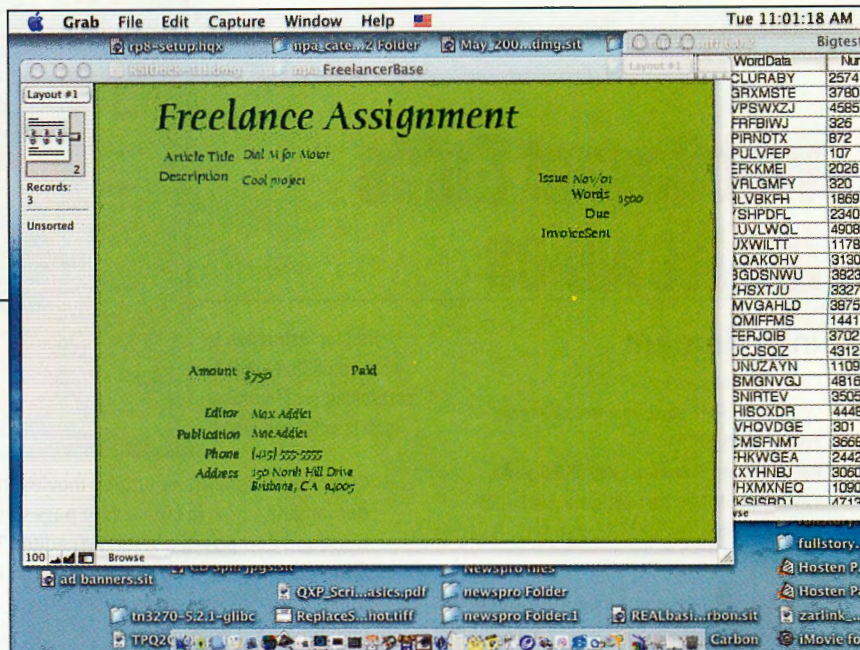
**Contact:** 800-325-2747, [www.filemaker.com](http://www.filemaker.com)

**Price:** \$249 (SRP), \$149 upgrade

**Requirements:** Power Mac, Mac OS 8.1 or later (Mac OS 8.6 or later required for Web Companion and ODBC features), 32MB RAM, 28MB free hard disk space, CD-ROM drive

**F**ileMaker has been the leading database program on the Mac platform for more than a decade, and version 5.5 continues the winning streak, adding support for Mac OS X along with a number of minor but useful improvements. If you only handle a small number of records, you'll love FileMaker's Mac OS X support—the program behaves much as it does under Mac OS 9. However, attempt to handle a large number of records under Mac OS X and FileMaker moves with glacial slowness. Despite this, FileMaker Pro 5.5 is the best major port to Mac OS X we've seen yet.

If you're not familiar with FileMaker Pro, it's a work-efficiency app that lets you easily create your own databases and customize their look and behavior using a wealth of tools. You can create relationships between databases and publish them to a Web page.



FileMaker Pro 5.5's familiar look and feel on the new platform will put Mac OS X users at ease.

The port of FileMaker's basic interface to Mac OS X is an unqualified success—the interface is so familiar that it's easy to forget you're in OS X—until you switch applications during a lengthy computation. Gone is FileMaker's annoying tendency to stall your Mac during long sorts, searches, and computations. In Mac OS X, you can easily switch to other applications and let FileMaker work in the background.

Unfortunately, if you use large data sets, FileMaker runs more slowly in Mac OS X than in older systems. In tests we conducted with a data set of 20,000 records, importing took twice as long under OS X as under OS 9, and sorting took three times as long. FileMaker's Import function suffers from OS X's

complex file-typing scheme—you can't import some text files (TextEdit plain-text ones, for example) until you change the file type to TEXT. The exporting features also suffer: If you plan to use any Mac OS X Unix-based tools, be prepared to do some extra mucking around—FileMaker exports traditional Mac-style text files (with a hard return terminating each line), which tend to confound Unix tools.

While support for Mac OS X is definitely FileMaker Pro 5.5's most notable new feature, it's hardly the only one. The Web publishing feature has sped up considerably (the server is now multithreaded), and you can turn off that wretched set of controls FileMaker Pro 5 used to display on every database you published. You can also run limited scripts from the Web and set access privileges on a record-by-record basis.

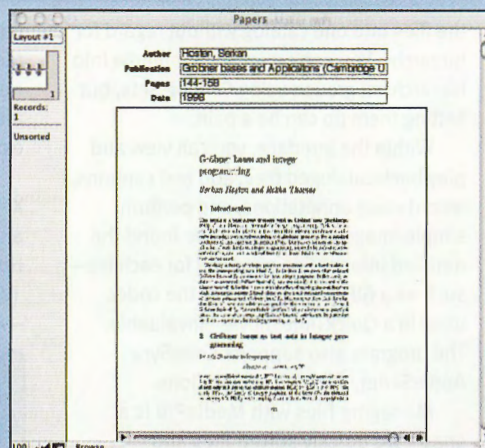
However, we wish the Import tool were more powerful—its limitations made it needlessly difficult to import fixed-field data, text files not of type TEXT, and white space-delimited data. We'd also welcome better integration with OS X's suite of Unix tools (and it would increase the program's power tremendously). Still, FileMaker offers the best combination of simplicity and power in its field, making it the database leader for the Macintosh.

—Ian Sammis

## The Virtual File Cabinet

**F**ileMaker Pro 5.5 is the first major app we've seen so far that sports a Mac OS X-specific feature. In OS X only, you can import a PDF file into a FileMaker container field. Since you can save any print job as a PDF file, this allows you to store any number of finished documents in a database for later retrieval.

Whether you're an academic or an editor, FileMaker's PDF support can simplify your life enormously.



**good news:** Runs smoothly in Mac OS X. Improved security features.  
**bad news:** Import and export features could stand improvement.





# Formac dvdram

## hardware

**Company:** Formac

**Contact:** 877-436-7622, [www.formac.com](http://www.formac.com)

**Price:** \$479 (SRP)

**Requirements:** Power Mac, Mac OS 9.0.4 or later, FireWire port, Apple FireWire 2.5 or later, CD-ROM drive (for Mac OS 9.x driver installation)

It's hard to get excited about storage media, but if you're Formac, and if you give your product a distinct look and package it under a savvy "form plus function" tagline, consumers will get excited. Or not. The problem: Formac's dvdram drive is like any other DVD-RAM drive—it's considerably slower than a hard drive and its design leaves much to be desired. However, it can also do something most other DVD-RAM drives can't—it can play DVD movies.

As a storage solution, DVD-RAM isn't bad—the rewritable discs hold up to 9.4GB of data and cost less than a cent per megabyte. However, DVD-RAM media cost \$25 to \$60 per disc, depending on their size—tack on the dvdram's \$479 price tag and the investment becomes pretty scary, considering that CD-RW discs cost about \$2 and CD-RW drives cost \$200 to \$400. But if your archives reach the gigabyte range, DVD-RAM is the way to go (it will hold about 14 CDs' worth of data).

As for the dvdram's appearance—lordy. It may appeal to some people, but it's a big, gray blob to us. It also looks identical to Formac's CD-RW (Reviews, Jul/01, p57)—the only way to tell the two devices apart is to open the drive trays. The eject button is the worst design aspect—you have to push it forcefully to eject the tray, and because the button sits beneath a dropping door,



PHOTOGRAPH BY W. B. JONES

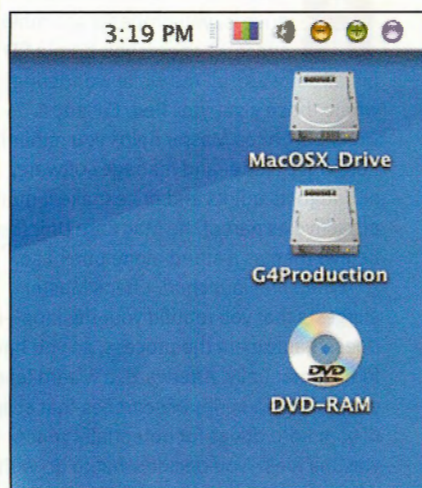
Hey, it's the Audi TT with safety bumpers instead of wheels!

you'd better develop a quick eject technique to avoid smashing your fingers under the door when it opens.

As for performance, the drive works fine. It took 32 minutes to copy a 1.14GB file from an ATA drive to the dvdram—a typical speed for this type of drive. We liked the immediate gratification of the dvdram's plug-and-play capabilities—in Mac OS 9.1 and Mac OS X, you don't have to install any software to get the device up and running. For folks whose Macs don't have DVD-ROM, the included ProDisc software enables the drive to play DVD video using Apple's DVD Player software—a very welcome feature that in itself makes the drive worth considering. The device is also bus powered, though you can connect power (not included) if you need extra juice.

The dvdram is a good product that does everything a DVD-RAM drive should do and then some. However, Formac needs to seriously look into and repair the device's flawed design to make it stand above the competition.—Andrew Tokuda

**good news:** Bus powered. Plug and play in OS 9.1 and X. Plays DVD videos. **bad news:** Huge. Clunky eject button. Case design identical to that of Formac's other products makes it easy to confuse devices.



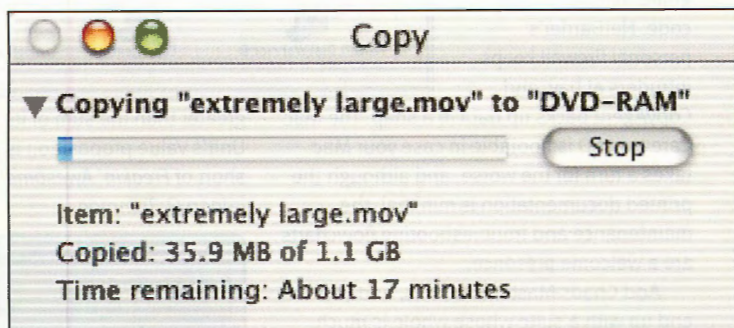
The dvdram is truly plug and play in Mac OS X (shown) and 9.1—it showed up on the desktop without making us install software drivers.

## DVD-R or DVD-RAM?

With DVD-R drive prices finally falling below the heart attack-inducing range (thanks to Pioneer), the uninitiated may wonder what the difference really is between DVD-R and DVD-RAM. They hold similar amounts of data and they look identical physically (if you were to take a DVD-RAM disc out of its caddy, that is).

The difference is comparable to the relationship between CD-R and CD-RW. In plain English, you save data permanently to a CD-R or DVD-R, whereas you can erase and rewrite data on CD-RW or DVD-RAM. DVD-RAM is primarily used for data storage, and you can only use it on computers that have DVD drives (you can't play DVD-RAM in a consumer DVD player). DVD-R is primarily used for authoring video DVDs, which you can play in most consumer DVD players.

Liar! It still takes about 30 minutes to copy a 1.1GB file to a DVD-RAM, regardless of what the dialog box tells you.





# Chaos Master

## utilities

**Company:** Casady & Greene

**Contact:** 800-359-4920, [www.casadyg.com](http://www.casadyg.com)

**Price:** \$49.95 (SRP)

**Requirements:** Power Mac, Mac OS 8.1 or later, 5MB RAM, 2.5MB free hard disk space, CD-ROM drive

**R**egardless of how hefty your hard drive is, you probably scramble for space whenever you burn a CD or install software, all the while wondering where those gigabytes fled. Casady & Greene's Chaos Master helps you minimize hard drive clutter and manage software, although its quirks and price make it more attractive as part of the Mac Care Unit (see below) than as a stand-alone purchase.

When first launched, Chaos Master suggests that you rebuild your desktop—it doesn't automate the process, so you have to do it manually. Afterward, a wizard leads you through a series of searches that scan all of your hard drives for potentially space-wasting files—you decide what to do with the result. We recovered 300MB on our 30GB drive, deleting Web-browser caches, abandoned preferences, old help files, and many forgotten downloads.

It may look like garbage, but trashing that DMF file will remove a font used by Big Race USA Pinball. Scary...

Chaos Master's results are impressive, but evaluating every file individually took considerable effort. You need to be extremely careful about what you remove—what looks like an orphaned file or empty folder might be crucial data, and Chaos Master does little to help novices understand what's important and what's garbage. The software selects candidates for removal, but we never felt confident enough to trust its judgment. For example, the program tagged our Mac OS 9.1 printer description files as orphaned text files, and gave the same categorization to the golf animations in Links LS 2000.

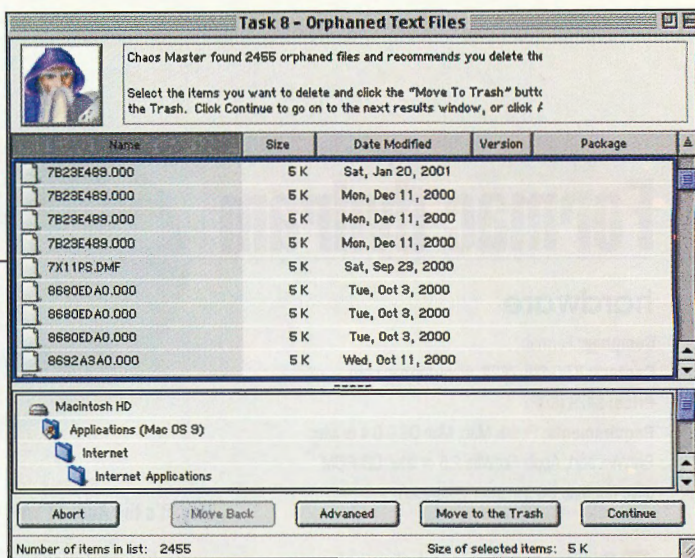
Two other features did little to ease our qualms. Version tracking, which searches the Version Tracker Web site for software updates, did note some patches we missed,

but it also confused Astrolog, a freeware astrology program, with MacSoft's Asteroids. Uninstall fared unevenly, removing only parts of Norton Personal Firewall, leaving the folder and help files behind, and acting a little too proactively when uninstalling BBEdit (it offered to remove not only the application, but also all the text files we created with it).

Chaos Master makes it easier to track down garbage files and find orphaned aliases, but it's a pricey and uninspiring alternative to going it alone.

—Jaap O. Tuinman

**good news:** Simple wizard. Tracking down redundant files is easy.  
**bad news:** Flags some important files as possible trash.



# Mac Care Unit

## utilities

**Company:** Casady & Greene

**Contact:** 800-359-4920, [www.casadyg.com](http://www.casadyg.com)

**Price:** \$129.95 (SRP)

**Requirements:** Mac OS 8.1 or later (some apps require a Power Mac and/or Mac OS 8.5 or later), CD-ROM drive

**C**haos Master on its own isn't a compelling reason to throw down your dollars, but bundling it in Mac Care Unit gives us more to get excited about. All of the apps in the bundle have been available as stand-alone purchases, but the bundle as a whole is a great deal if you don't already own the products.

DiskWarrior and PlusOptimizer protect, fix, and optimize your hard drive, while Conflict Catcher organizes extensions, keeping your Mac running smoothly.

A great reason to buy it—this suite includes lots of great software!

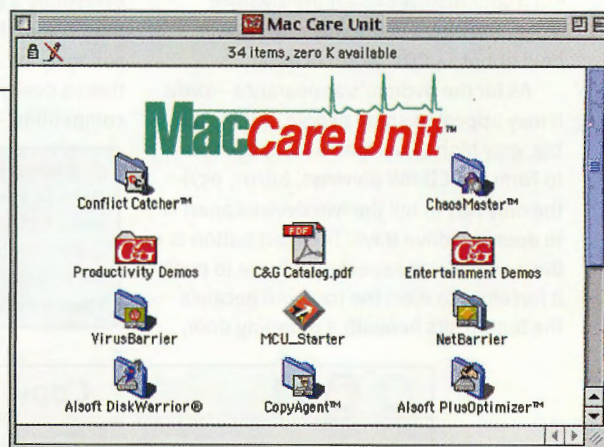
VirusBarrier, one of the most elegant antivirus software programs we've seen, effectively stands guard against malicious code. NetBarrier's personal firewall keeps intruders at bay, and CopyAgent backs up data in a snap. The Mac Care Unit CD is bootable in case your Mac takes a turn for the worse, and although the printed documentation is minimal, the maintenance and troubleshooting flowcharts are a welcome presence.

Add Chaos Master to all this, and you end up with a suite whose whole is much

greater than the sum of its parts. Mac Care Unit's value proposition is nothing short of *Freakin' Awesome!*

—Jaap O. Tuinman

**good news:** Covers just about every Mac crisis. Great value.  
**bad news:** Skippy documentation.





# C-3040 Zoom

## hardware

**Company:** Olympus

**Contact:** 888-553-4448, [www.olympusamerica.com](http://www.olympusamerica.com)

**Price:** \$999 (SRP)

**Requirements:** Power Mac, Mac OS 8.6 or later, USB port

In a weird way, walking down an aisle in a huge electronics store gives us a sense of what celebrity must be like—everywhere we turn, it seems like hundreds of camera lenses are shoved in our face. Of course, the only autograph we'll be signing is our Visa charge. Point-and-shoot digital cameras are well represented on store shelves, but a digital camera with a built-in wide-aperture lens for low-light shooting was nowhere to be found—until now.

Olympus comes to the rescue with the C-3040 Zoom 3.34-megapixel camera, which features the Super Bright f-1.8 to f-2.6 lens (the smaller the number, the wider the aperture). Large apertures let more light into the camera, making low-light photography without a flash possible. A large aperture also narrows the depth of field so you can focus on a subject in midplane, blurring its foreground and background.

The C-3040 Zoom is compact yet comfy to hold, and features a maximum 2,048 by 1,536 TIFF resolution; 7.1mm to 21.3mm focal length (equivalent to a 35mm to 105mm lens on a 35mm camera); 3X optical and 15X digital zoom; a 1.8-inch color LCD monitor; macro mode; four flash modes; auto, preset, and manual white-balance modes; four image-effect modes; QuickTime movie capability (320-by-240-pixel resolution at 15 fps); and audio-recording capability.



PHOTOGRAPH BY W. B. JONES

The C-3040's Super Bright lens is absolutely super.

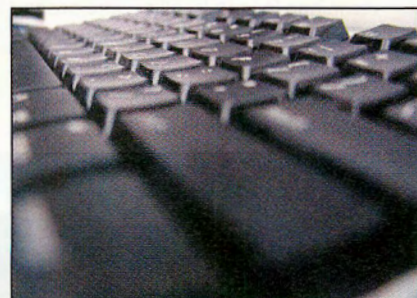
The C-3040 includes two CR-V3 lithium batteries, but they're not rechargeable—a disappointment, since other cameras ship with rechargeable batteries. However, it also accepts four AA batteries (NiMH, lithium, NiCd, or alkaline). The device includes a 16MB SmartMedia card, but one snapshot on the high-resolution setting fills this up—our SanDisk 128MB SmartMedia card came in handy (\$145, [www.sandisk.com](http://www.sandisk.com)).

Image quality is great, but with 3.34 megapixels we expected better—the photos were on the soft side compared to those from our 2.5-megapixel Olympus C-2500L. Still, the C-3040 did an excellent job of handling tricky exposures, and the color looked real, not candy coated. We especially like its USB Storage Class connectivity (this mounts the camera on your desktop like a hard drive), which makes downloading a breeze.

We noticed what a difference the Super Bright lens makes. We snapped a photo that focused on one flower while blurring the surrounding flowers, though the effect isn't as grand as what you'd see on 35mm film. In low light, the Super Bright lens worked well without flash, freezing our fleeing cat

better than a scolding—or any other camera we've tested (apart from digital SLRs with interchangeable lenses).

However, Olympus isn't kidding when it calls this lens Super Bright—sunlight washed out our f-1.8 images, and the maximum 1/800-second shutter wasn't fast enough to prevent overexposure. Narrowing the aperture to f-2.4 gave us a great exposure but flushed our narrow depth-of-field composition down the toilet. Maybe Olympus should look into a Super Shutter to compensate for the Super Bright lens.

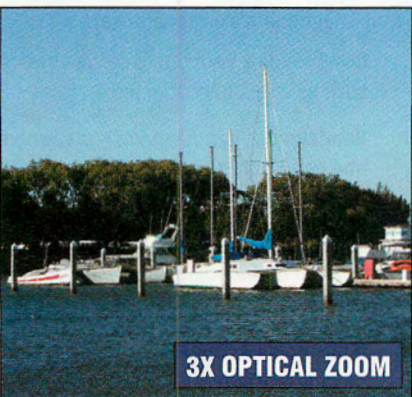


PHOTOGRAPH BY KRIS FONG

Using an f-1.8 aperture, we narrowed the depth of field to focus on this keyboard's midsection, blurring the foreground and background.

Harm may come to the camera if you forget to remove the lens cap *before* you turn it on. We were subjected to horrific grinding noises as the lens tried to extend to its ready mode with the cap in place. (While we're not sure if this accident caused the problem, our first review unit stopped focusing afterward.)

Overall, the C-3040 Zoom is a great all-in-one camera that packs powerful features into an easy-to-use device. —Kris Fong



3X OPTICAL ZOOM



15X DIGITAL ZOOM

Though digital zooms are generally deficient, the C-3040's digital zoom took a decent photo.

**good news:** Enables narrow depth of field. Great picture quality. Easy image downloading. **bad news:** Images a bit soft. If you forget to remove the cap, you could damage the lens.





## Tony Hawk's Pro Skater 2

### fun & games

**Company:** Aspyr Media/Activision

**Contact:** 888-212-7797, [www.aspyr.com](http://www.aspyr.com)

**Price:** \$44.95 (SRP)

**Requirements:** 233MHz G3 or faster, Mac OS 8.6 or later, 32MB RAM, 192MB free hard disk space, ATI Rage Pro graphics card or better, OpenGL 1.1, 4X CD-ROM drive

**Y**ou know you have a serious problem when you suddenly have the urge to do a handplant on your office desk or grind the railing at the local mall. Be forewarned—that's the spell this game will cast on you. One of the best-selling PlayStation games of all time, Aspyr's port of Tony Hawk's Pro Skater 2 is so incredibly fun—not to mention addictive and consuming—that it will have you seeing, hearing, and dreaming about perfecting your technique for grinds, ollies, and nosegrabs for more hours in a day than any psychologist would deem healthy. (See "Skateboarding 101," below, for the lowdown on skater lingo.)



Venice Beach has tons of graffiti. Or is it art?



An above-ground subway in New York? At least we didn't see any rats.



There are secret areas aplenty, including this one in the Marseille level. Finding them is the trick.

You play 1 of 13 skaters attempting to skate through eight challenging levels situated in various skate-park venues around the world, including Marseille, France; Venice Beach, California; and New York. Each level contains a series of widely varied goals; their degree of difficulty dictates how much money you'll get upon completion. Earn enough money and you advance to a new level.

Two of the levels are medal rounds rather than goal levels. For these rounds, you compete in three 1-minute heats, rated by a panel of computer judges—your best two heats count, but you must place among the top three competitors to receive money and advance to the next level. Think the judges scored your mad skillz unfairly? Tough luck. Try again—and quit your whining.

The goals involve a series of tasks, such as collecting five of the same item (you must collect five hall passes in the California schoolyard, for example); performing a

cool trick like 50-50ing a sculpture (that's skater lingo for a type of grind, dude); or completing some bizarre feat, like ollieing a Venice Beach bum who magically appears and disappears. Some goals involve free skating, where you earn money for reaching a certain score. The more tricks you perform in combination, the higher your score. Perhaps the coolest thing about the game is that you can interact with almost any object in a level—you can grind street curbs, carplant taxi cabs, and even ride along walls.

Pro Skater 2 can really test one's cool—some of the goals can take tens if not hundreds of tries to pull off. To do the truly special tricks, you must upgrade your stats and arsenal of tricks. Each skater has a set of strengths and weaknesses. To improve these stats you need to perfect certain feats, such as landing, catching air, or spinning, and complete some of the harder challenges. You can also buy new tricks.

## Skateboarding 101

If someone suggests that you grab before you grind, don't kickflip them down the quarterpipe—that seemingly lewd proposal is legitimate skateboardsese.

**Grab** Grabbing your board as you get air.

**Ollie** A basic jump that involves smacking down the tail of your skateboard with your foot to launch the board into the air.

**Halfpipe** A ramp that curves upward on both sides.

**180, 320, 540, 720, or 900** Degree of rotation turned in a skate trick (360 degrees equals one full rotation, so "doing a 720" is completing two full rotations in a jump).

**Grind** Sliding your board along any edge, such as a rail, bench, or ledge.

**Handplant** A handstand of sorts, where one hand holds on to any surface while the other holds on to the board.

**Kickflip** An ollie that includes a full rotation of the board widthwise before landing.

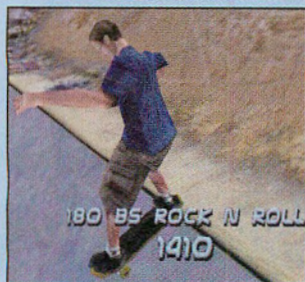
**Quarterpipe** A ramp that curves upward on only one side.



# Tricks of the Trade

**T**here's plenty of opportunity to get extreme in Pro Skater 2. The game is littered with walls, railings, stairs, bowls, and pipes that

you can grind, plant, and use to get air. If you're looking to rack up performance points, here are a few of the tricks Tony has up his sleeve.



**Rock and Roll** Balance on a lip using the jump, grind, and down buttons.



**Nosebone** Anytime your skater gets air, you can perform a grab trick while spinning in the air.



**Boardslide** Turn your board perpendicular to the rail and grind like there's no tomorrow.



**Gymnast Plant** Plant your hand on the lip, hold onto your skateboard, and let the points pile up.

To finish the game, you must complete every goal in all of the levels—a difficult challenge that practically requires you to quit your job and make playing this game your full-time career (not that we advocate that). After finishing the game, you can have still more fun—just switch to another skater or build your own skate park (see “If You Build It, They Will Skate,” below).

Except for a few clipping and redrawing problems leftover from the game's PlayStation roots, the graphics are solid and look pretty cool. Each level has its own feel—from the graffiti walls of Venice Beach to the dark streets of New York to the fountains and parks of Philadelphia. Unfortunately, because of the port, a few console-based annoyances exist. For example, you can't type in your name using the keyboard when you want to save a game—instead, you have to maneuver

the cursor to the correct letter onscreen. Also, the music (15 tracks in all), which blasts in an endless loop, can be annoying. An included Mac OS X version runs fine, but until that system offers support for Apple's InputSprockets, you can't use a gamepad to play (our preferred method).

That said, Tony Hawk 2 is a fantastic game that will have you high on adrenaline one minute and more frustrated than a teenage boy going through puberty the next. Whether it leaves you feeling triumphant or battered, Tony Hawk's Pro Skater 2 will keep you coming back for more.—Cathy Lu

**good news:** Huge adrenaline rush. Consistently challenging. Offers lots of replay value. **bad news:** Minor graphics problems. Console roots apparent. Frustrating gameplay.



## If You Build It, They Will Skate

**O**ne cool thing you can do in Pro Skater 2 is build your own skate park. Choose from four types of environments (industrial, power plant, outdoors, or schoolyard) and add obstacles (including rails, stairs, signs, pools, foliage, and quarter pipes), all of which come in different shapes and sizes. As you build, you can test your park by having Tony skate around. One problem: When we tested our pool, Tony would trip and fall on the lip and refuse to get up for a few seconds. Hey, we're no construction expert, but we're not *that* bad!



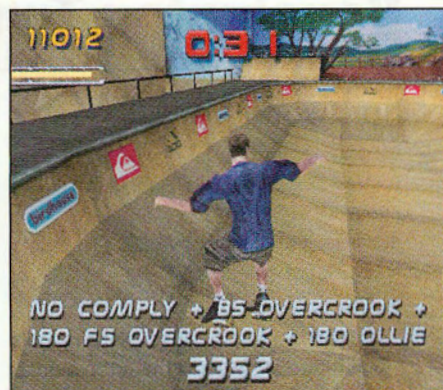
Carve a pool—in the construction sense. Choose from eight different styles to add to your park.



After adding elements, test out your architectural prowess by sending test-monkey Tony down.



Don't let this eponymous name fool you. You can choose to be Steve Caballero or another skater.



The thrill of victory...



...and the agony of defeat.



# Peerless 10GB USB Bundle

## hardware

**Company:** Iomega

**Contact:** 888-516-8467, [www.iomega.com](http://www.iomega.com)

**Price:** \$359.95 (SRP)

**Requirements:** Power Mac with built-in USB, Mac OS 8.6–9.x, 10MB free hard disk space, 2X CD-ROM drive

If you have tons of files and your puny Zip drive is getting you down, Iomega's Peerless removable-media system will make your day. Faster than burning to DVD-RAM, the Peerless 10GB USB Bundle is a combination Base Station and 10GB removable hard drive that lets you quickly store precious gigabytes. Iomega also offers a superfast FireWire Base Station and a 10GB drive for the same price.

Installing the Peerless is easy: Plug it into an available USB port and install the driver. Not only is it easy to install, but it's also durable. In our unscientific testing

(dropping the disk repeatedly from a height of 6 feet onto a carpeted floor), the Peerless disk held up admirably and didn't lose a single byte of data. Although Peerless disks are capable of up to 15 MBps transfer rates, the USB interface can be painfully slow, making it a less-than-perfect solution for digital video, but more than satisfactory for backing up data. Multimedia mavens should look into the FireWire Bundle.

Individually, a USB or FireWire Base Station runs \$249 and a 10GB drive costs \$159 (cheap!). Since you need both, buy the

The Iomega Peerless system will back up files and expand hard drive space affordably—after you make the initial investment, that is.



PHOTOGRAPH BY W. B. JONES

bundle, which shaves off about \$50. Although the initial cost for the Base Station is high, once you've made the investment, storage is incredibly affordable—around \$16 per gigabyte. A 20GB drive sells for \$199, lowering the cost to under \$10 per gig.

If the space you require hits the gigabyte range, you can't go wrong with the Peerless.—Rick Sanchez

**good news:** Low-cost media. Reliable drive mechanism. Large-capacity drives. **bad news:** High cost for Base Station. Slow USB interface.



# Kensington Turbo Mouse Pro

## hardware

**Company:** Kensington

**Contact:** 800-235-6708, [www.kensington.com](http://www.kensington.com)

**Price:** \$109.99 (SRP)

**Requirements:** Any Macintosh, Mac OS 8.1 or later, USB port

If you're a trackball user, Kensington's products, including the Turbo Mouse, probably rank among your favorites. The Turbo Mouse Pro improves upon older designs by adding six new buttons to the original four, along with a scroll wheel. Although the new buttons are a welcome addition, they may not inspire current users to upgrade. However, Mac users who feel the Apple mouse's single button is a serious design flaw may find the answer to their woes in the Turbo Mouse Pro.

The current design is similar to its predecessors—the ball movement is smooth, and its weight gives it a fluid, solid feel. The device's symmetry also makes it comfortable for both lefties and

righties to use. The four main buttons commonly serve click functions in the Finder—for example, single-clicking, double-clicking, and dragging—but you can customize a button via the MouseWorks control panel to make it launch a URL, autotype predefined text, or pop up the Instant Menu, which displays the current application's menu bar. The Turbo Mouse Pro also lets you customize any button to open the EasyLaunch Menu (a great feature) and choose from its list of functions, such as launching URLs, applications, text strings, or anything else you care to define.

The Turbo Mouse Pro's six new buttons handle presets that launch either a URL or

Move over, one-button mice—power now lies at the tip of every finger.



PHOTOGRAPH BY W. B. JONES

an application—that's it. For current Turbo Mouse users, this weak feature makes for a less-than-compelling upgrade.

A Mac OS X–native version of MouseWorks is included, but doesn't have the full functionality of its Classic counterpart. Still, if you're looking to escape the limitations of a one-button mouse, the Turbo Mouse Pro is a great rescuer.

—Andrew Tokuda

**good news:** Comfortable design. Main buttons provide excellent customization. Mac OS X support. **bad news:** New buttons offer limited customization.





# PowerShot S110

## hardware

**Company:** Canon

**Contact:** 800-652-2666, [www.powershot.com](http://www.powershot.com)

**Price:** \$599 (SRP)

**Requirements:** Power Mac, Mac OS 8.1–9.1, USB port

The dinky S110 (shown here slightly smaller than its actual size) produces great pics—and you can stash it in a pocket.



PHOTOGRAPH BY W. B. JONES

**L**illiputian in size and slick in design, Canon's PowerShot S110 (aka Digital Elph) is one cool camera. Slightly larger than a credit card and about as thick as a deck of cards, the brushed-silver S110 weighs in at a bantam 6.7 ounces (without battery or CompactFlash card)—great for pocket portability.

The 2.1-megapixel S110 is solidly built. For impatient snappers, it's easy to use right out of the box. For those who want to take advantage of the camera's manual features,

such as white-balance settings (auto, daylight, cloudy, tungsten, and fluorescent), forced flash (great for filling in shadows), stitch assist (for creating panoramic shots), and black-and-white mode, the user guide is packed with clear instructions.

The S110 is a lot like its predecessor, the S100, with a maximum shutter speed of 1/1,500, an ISO of 100 (not great for low light, but manageable), a 2X optical zoom (equivalent to 35mm to 70mm on a 35mm camera), and a 2.5X digital zoom. The camera comes bundled with a long-lasting Lilon battery pack, a charger, USB and AV cables, and an 8MB CompactFlash card. The software bundle includes ArcSoft VideoImpression and PhotoImpression.

The camera has several new and improved features—the coolest being the camera's ability to print directly to Canon's CP-10 dye-sub printer (see "No Computer, No Problem," below). Another improvement is the additional resolution settings—the S110 offers nine mix-and-match capture options. You can set the resolution to 640 by 480, 1,024 by 768, or 1,600 by 1,200, with a choice of normal, fine, or superfine compression within each resolution setting. The S110 also has noticeably faster processing speeds so the camera is ready to use more quickly

after each shot, and a new color filter has improved its already good color accuracy.

While we've never been enamored of movie modes in digital still cameras, it's a fundamentally fun feature. The S110 records low-res video with sound (640 by 480 max) at 20 fps. You can view movie clips in the camera, but you'll have to download them to your computer for sound.

We do have some minor quibbles. The built-in flash isn't perfect—it has a hard time stretching to the edges of wide-angle shots. At the other extreme, if you're not careful about distance, the flash may occasionally blast out macro shots. The colors are good but not always as vivid as we remembered them live. Also, folks with large hands may want to test the S110 before buying it to make sure they can manage the controls.

At press time, Canon said it was working on OS X compatibility, though the company didn't specify any completion date. Overall, while there are higher-megapixel cameras equipped with bells and whistles to spare, most don't come close to the charm and high-tech cool of the S110.—*Theano Nikitas*

**good news:** Cool-looking and tiny. Easy to use. Produces high-quality pics. **bad news:** Controls may be too small for big mitts. A little pricey.



PHOTOGRAPH BY THEANO NIKITAS

If you judge distance carefully, a macro shot taken with flash produces only subtle hot spots.

## No Computer, No Problem

**F**or quick prints sans computer, Canon offers the CP-10, a tiny dye-sub printer (a bit bigger than the S110). At \$299, this device will take a bite out of your budget, and it only works as a direct-connect printer with select Canon cameras, including the S110 (print settings are controlled in-camera and fed to the printer via a supplied cable). However, the CP-10 outputs 300 by 300 dpi, credit-card-size prints that are nicely clear, crisp, and colorful.

The CP-10's prints are tiny—no bigger than a credit card—but they deliver good color and contrast.



PHOTOGRAPH BY THEANO NIKITAS



PHOTOGRAPH BY THEANO NIKITAS

The S110 does a good job of balancing exposure under harsh noontime light. It handles highlights well and maintains decent detail in shadows.



# electron19blue

## hardware

**Company:** LaCie

**Contact:** 800-288-9919, [www.lacie.com](http://www.lacie.com)

**Price:** \$589 (SRP)

**Requirements:** 15-pin monitor port

LaCie's electron19blue looks dark and ominous, but it displays refreshingly light and clear images.



PHOTOGRAPH BY W. B. JONES

It isn't healthy to stare at any monitor for hours, but some can make the pain more palatable. LaCie's electron19blue, a flat-screen CRT monitor, has a flicker-free, 19-inch diagonal (18-inch viewable) display that provides great color, crisp images, and the option of professional color calibration—all for a slightly elevated price.

With its matte-black finish and navy-blue hood, the electron19blue looks like a computing Grim Reaper. However, this unusual design effectively cuts down ambient and reflective light, providing a brighter picture. The flat screen eliminates image distortion, and the maximum 1,600-

by-1,200-pixel resolution with 85Hz refresh rate gives you a sharp picture sans flicker. Small type strained our eyes less, image color jumped out at us, and DVD movies were a pleasure to watch—with eye-pleasing iridescence and texture.

The monitor features an easy-to-use button panel on its front that allows you to fine-tune pictures. For concise color calibration, LaCie sells the optional blue eye, an integrated USB hardware-software color calibrator, for \$499. On a LaCie monitor, the blue eye hardware calibrates each red, green, and blue electron gun through your Mac's processor.

The electron19blue is pricey compared to other 19-inch CRT monitors. But when you factor in the refresh rate and the picture's overall clarity—and especially after you watch that first full-length DVD movie on your new monitor—you'll think it's well worth the price.

—Narasu Rebbapragada

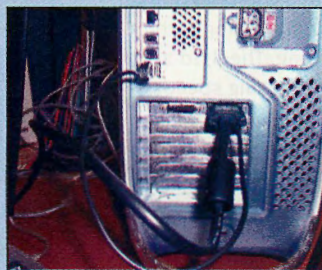
**good news:** Clear, bright display.  
**Hood** enhances quality of picture.  
**bad news:** Pricey.



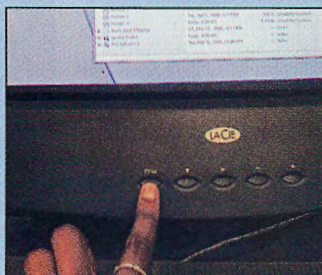
## Hey, Blue Eye! Calibrate Our Color

LaCie's blue eye color-calibration package features a USB hardware calibrator and an accompanying software app that allows you to set consistent colors across different monitors in color-critical work environments. The package requires a blue-and-white G3 or faster, Mac OS 9 or later, and two USB ports (one of which you must connect directly to a Mac, not to a peripheral or hub). Calibrating the electron19blue is easy.

**1** After installing the blue eye software, shut down your machine. Replace your existing monitor cable with this strange-looking one, and plug its USB connector into an available port on the back of your Mac. Then restart.



**2** Plug the blue eye calibrator into any free USB port (including the keyboard or hub ports), and then launch the blue eye software. (To run the software, you must turn off the monitor's Fine Picture mode using the FPM button on its front.)



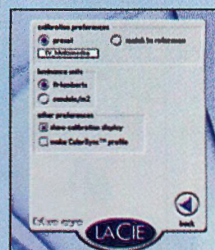
**3** In the software interface, click the Measure button and then the Room Lighting button. Hold the calibrator away from the monitor (suction cups facing you) and press Measure again—the device will measure the ambient light. When you're done, click the Next button.



**4** Now affix the calibrator via its suction cups to the black circle displayed on the screen. Click the Calibrate Display button, and the blue eye will automatically adjust the monitor's brightness and color temperature, set the gamma, and balance the grays on your monitor.



**5** For specific uses, click the Setup button to bring up a dialog box where you can calibrate your monitor to a preset setting or to the settings of another monitor. We chose the TV\_Multimedia preset here to watch a DVD.





# Altec Lansing Speakers

## hardware

### AVS200, AVS300, and AVS500

**Company:** Altec Lansing

**Contact:** 800-258-3288, [www.altecomm.com](http://www.altecomm.com)

**Price:** AVS200—\$19.95, AVS300—\$39.95, AVS500—\$59.95

**Requirements:** Any Mac with a stereo minijack audio out; AVS500 requires a sound card with front and rear minijack outs.



**S**ound for Mac users is getting more exciting now that the SoundBlaster Live card (\$149.99, [www.creativelabs.com](http://www.creativelabs.com)) is available for the Mac, offering simulated and true 3D-surround sound. Speaker maven Altec Lansing has released three amazingly affordable systems that promise to deliver high-quality audio for music and gaming. With their dinky price tags, you've got to wonder if these systems are a steal of a deal or if you get what you pay for. After subjecting our ears to a wide variety of CDs, MP3s, and a few games, we decided that if you're a gamer, you'll be pleased.

The two-speaker AVS200 sports a unique, curvy design with an on-off button and volume knob. Made of lightweight plastic surrounding a 3-watt, 3-inch driver, these powered speakers sound pretty much as we thought they would—good midrange, bad low end. We will say that compared to most speakers at this level, the AVS200 sounds better, though it suffers from distortion at higher volumes and with bass-pumping music.

The mid- to high-range frequencies are crystal clear, with better presence than the typical flat-sounding speakers in this

**The cream-of-the-crop AVS500 adds thunder to your fragfest without emptying your wallet.**

league. They're fine for your average computer multimedia use, but not great for music or for pumping out the rumble of a rocket launcher. Though they're dirt cheap, when you consider that Altec Lansing offers a much better-sounding system for a mere \$20 more, the AVS200 isn't that impressive.

The AVS300 is a three-speaker system, comprised of two 7w satellite speakers and a 10w subwoofer. The satellites are a squattier version of the AVS200's and sound similar, minus the distortion. The subwoofer is made of pressed wood—a good sign for better tone and resonance—but could be louder. Music with tight bass (techno, hip-hop, and so forth) sounds great with this system, as do computer games.

Unfortunately, other types of music don't fare as well. While the subwoofer has its own volume control, you can't control which frequencies feed the enclosure—the boosted frequencies are too low for most music, causing a hole where the low-midrange frequencies should be. Still, the AVS300 offers good sound at a great price, and gamers will appreciate it.

The top-of-the-line AVS500 is a five-speaker system—four 14w satellites (two front, two rear) and a 14w subwoofer—that offers true surround sound for gamers with a sound card. This system is essentially the AVS300 with two more satellites thrown in, and for \$60 it punches out fine 3D sound at a terrific price.

Like the AVS300, the system is decent for some music, but not stellar. But for games, the AVS500 becomes an incredibly attractive deal, bringing them to life with the help of a SoundBlaster Live card. We did have a hard time placing the rear speakers (they don't come with floor stands or a means to mount them on walls)—we finally placed them on two stools.

While we wouldn't chuck our stereo system for any of these speaker systems, for gamers the AVS300 and AVS500 are worth the small investment.—Kris Fong

#### AVS200

**good news:** Dirt cheap. Good, clear, high midrange.  
**bad news:** Nonexistent low range. Distortion at higher volumes.



#### AVS300

**good news:** Great for gaming. Distinct bottom end without distortion. Good price. **bad news:** Lacks low-midrange tone. Subwoofer could be louder. Not the best for music.



#### AVS500

**good news:** Good price for 3D-surround system. Great sound for games. **bad news:** Subwoofer could be louder. Lacks low-midrange tone. Not the best for some music styles.



**The AVS300 offers gamers good bang for the buck.**



**The AVS200—decent speakers, great price, but overshadowed by its better-sounding siblings.**



## Kodak Personal Picture Maker 200 by Lexmark

### hardware

**Company:** Kodak

**Contact:** 800-235-6325, [www.kodak.com](http://www.kodak.com)

**Price:** \$199.95 (SRP)

**Requirements:** Power Mac, Mac OS 8.0–9.1, 64MB RAM, USB port (in computer-connected mode), SmartMedia or CompactFlash card (in stand-alone mode)



PHOTOGRAPH BY AARON LAUER

**T**he Kodak Personal Picture Maker 200 by Lexmark is the duck-billed platypus of inkjet photo printers.

It's a decent enough product, with some nifty individual features, but its two personalities—a stand-alone printer that prints files from the built-in card readers, and a standard USB printer that functions in typical fashion—don't work together as well as they should. The result is an interesting oddity, but hardly the king of the inkjet jungle.

The PPM 200 is a sleek black inkjet printer that flaunts two media-card readers—one for SmartMedia, one for CompactFlash—and a 1.8-inch color LCD display on its body. It features built-in Kodak software for photo editing without a computer, 1,200-by-1,200-dpi resolution, and a USB port for connecting to a computer or a USB storage device, such as a Zip drive.

Hooking the PPM 200 to our iMac was a breeze. The included software was Mac friendly, and after snapping in the ink cartridges, we were up and running in minutes without a restart. When connected

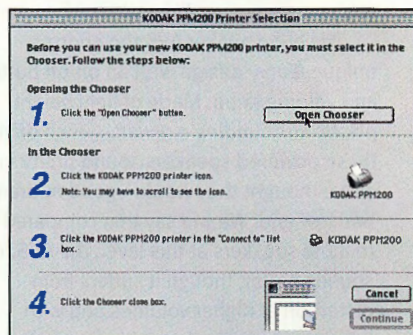
**Though the feature set is nice, the performance is questionable.**

to a computer, the PPM produced prints slightly sharper than those from our comparison machine, an Epson Stylus 740, but it took up to twice as long to print—23 minutes for an 8 by 10 image at best quality, compared to 12 minutes for the same print on the Epson. The PPM handled plain text beautifully, delivering crisp and speedy prints even in draft mode. Photo printing on glossy photo paper yielded images with rich green grass, deep blue skies, and not a hint of banding or graininess. Interestingly, though, we didn't see much difference between the PPM's lowest- and highest-quality prints.

In stand-alone mode, the PPM doesn't require a computer to print images, thanks to its CompactFlash and SmartMedia ports. Simply insert a media card into the appropriate slot and preview images on the built-in color LCD screen. You can even edit photos using the four onboard control buttons and the printer's internal software.

Unfortunately, these fancy features aren't as great as they sound. The printer's software isn't bad, but it can't compete with basic photo-editing programs. We found the multiple buttons

a little confusing, and the low-resolution screen didn't impress us. At just under a 2-inch diagonal, the LCD didn't give us an accurate representation of what we were planning to print. Also, in stand-alone mode, you can't print images at a resolution higher than 600 by 600. Carbon fans should also note that the printer is not compatible with Mac OS X, and Kodak has no plans at this time to change that.



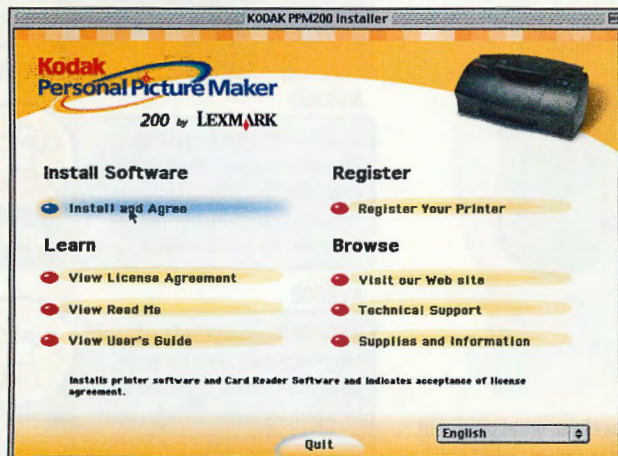
**Look, Ma, no restart! Just select the printer in the Chooser and you're ready to print.**

If you have a digital camera but no computer, the PPM is a decent solution, but you can't edit your photos as well as you could with a computer. If you're looking for a photo printer to attach to your computer, the PPM's high quality doesn't compensate for its sluggishness. Also, you can get a faster inkjet and a USB card reader for less than its \$200 price tag.—Nathan Alderman

**good news:** Built-in card readers. Great text prints. Vivid color.  
**bad news:** Very slow printing. Expensive. Uneven print quality.



**It's too bad the printer itself isn't as well designed as its installer interface.**





# VectorWorks 9.0

## design & graphics

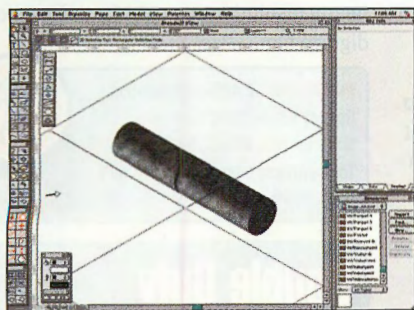
**Company:** Nemetschek

**Contact:** 410-290-5114, [www.nemetschek.com](http://www.nemetschek.com)

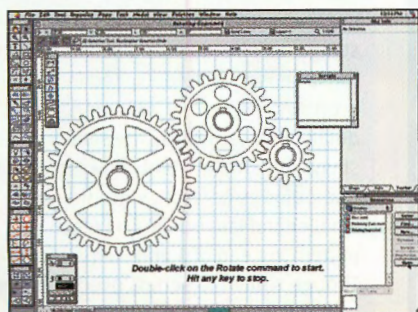
**Price:** \$895 (SRP), \$1,195 with the RenderWorks plug-in

**Requirements:** Power Mac, Mac OS 8.6–9.1, 64MB RAM (256MB recommended), 64MB free hard disk space (110MB recommended), CD-ROM drive

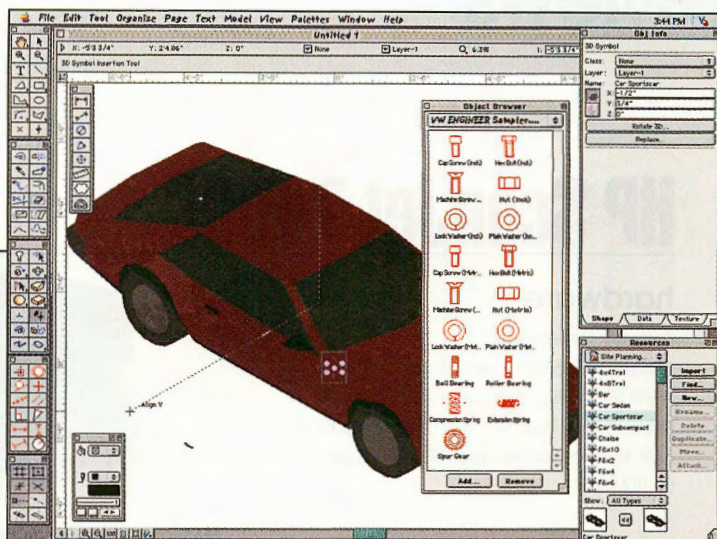
Those of you who packed away your T squares in favor of a competent design and architecture software package probably know about Diehl Graphsoft's MiniCAD, the premier CAD package for the Macintosh for over 15 years. The program enjoyed a major overhaul after version 7, and Diehl rechristened it VectorWorks. After acquiring Diehl Graphsoft, the German company Nemetschek decided to split the CAD tool into a series of more specialized products tailored to specific needs, such as architecture, landscaping, and set design for entertainment. But if you're looking for a well-rounded, sophisticated package that's easy to use, the base VectorWorks 9 package is a great way to go.



Three commands take you from a simple 2D drawing to a photo-realistic 3D view.



VectorWorks supports animation for whatever you care to design, whether you're viewing moving parts or performing walk-throughs.



VectorWorks includes comprehensive object libraries so you can drop in practically anything, such as humble cap screws to build automobiles.

One of VectorWorks' best features is its modularity. The base package does the essential CAD work and includes a simple rendering engine. RenderWorks, an optional dedicated plug-in that includes a large variety of textures and lighting options, handles more-sophisticated rendering. The two together cost substantially less than most competing packages (a notable exception being DenebaCAD). If you're doing mechanical engineering and don't need elaborate, photo-realistic rendering, VectorWorks is a downright cheap option.

The base package doesn't sacrifice any functionality. VectorWorks is a full-featured CAD program with probably the best interface of any package on the market for Mac or Windows. All of the usual CAD tools are present, and it supports just about every measurement standard as well as animated flyovers and walk-throughs—indispensable features for architectural projects. VectorWorks will also calculate certain physical properties of a 2D object for you, such as the

moment of inertia, although to make this feature really useful Nemetschek should have offered it for 3D objects as well. The optional RenderWorks plug-in offers a wide variety of textures and lighting options, allowing you to specify multiple light sources and position them at will. It also supports sun positioning. Features new to VectorWorks 9 include native support for AutoCAD 2000 files, parametric constraints, and associative dimensioning. RenderWorks now includes user-definable color, reflectivity, transparency, and bump features. OS X support is due this summer.

If you need a powerful CAD program, VectorWorks 9 is a joy to use. If you use your Mac to design, this program will likely meet your needs.—Eric Black

**good news:** Powerful and mature. Modular design. Comprehensive object libraries. Simple interface.  
**bad news:** Supports one view at a time. Calculates for 2D objects only.



## CAD Conversation

**Associate Dimensioning** These measurements are "anchored" to an object. If you resize it, the dimensions displayed on the drawing update automatically.

**Parametric Constraints** These are fixed relationships between objects, such as distances, angles, or even geometry—for example, requiring that two circles remain concentric.

**Polygons** These are collections of flat objects with straight edges. Computers usually display 3D objects onscreen as

collections of polygons, with the rendering engine determining each element's color, transparency, texture, and so forth.

### NURBS (Non-Uniform Rational B-Splines)

A mathematical way of representing smooth surfaces, NURBS produce images that look good at any magnification. Most CAD programs store objects as NURBS, with the renderer deciding how best to represent the object in terms of polygons for onscreen display. VectorWorks includes a NURBS tool that allows you to create and edit these objects directly.



# HP ScanJet 7400C

## hardware

**Company:** Hewlett-Packard

**Contact:** 800-752-0900, [www.hp.com](http://www.hp.com)

**Price:** \$499 (SRP)

**Requirements:** Power Mac, Mac OS 8.5 or later, 64MB RAM, 15MB free hard disk space, SCSI or USB port, CD-ROM drive

**S**peed and accuracy rank high on the list of things that make a scanner appealing, so HP introduced the ScanJet 7400c to the prosumer market with claims of previews in as little as 4 seconds and scans of up to 2,400-dpi optical resolution. Our findings: The 7400c is a well-rounded scanner that digitizes prints, negatives, slides, and documents (up to legal size) quickly and accurately and has other cool features.

The ScanJet 7400c is equipped with two image sensors—a 2,400-dpi staggered-pixel sensor for high-res optical scans and a 600-dpi linear-pixel sensor for speed and quality at lower resolutions (see “Double Duty,” right). This all-in-one device also features one-touch scanning, emailing, faxing, and OCR (optical character recognition); comes with USB and SCSI ports; and includes a transparency adapter for scanning film.

Setup is relatively simple if your Mac’s USB ready—just install the software and connect the scanner to a free USB port on your Mac with the included USB cable. The unit doesn’t include a SCSI cable, though you can order HP’s SCSI kit if you’re so inclined. The XPA (transparency) attachment plugs into a serial port on the back of

**Modernize your old photos, slides, and negatives with a stealthy 2,400-dpi scanner.**

the scanner, though a protrusion makes it a little hard to get at.

The 7400c features six buttons up front, which (once you set the preferences in the control panel) allow you to scan and automatically send an image to any application (Photoshop, email, fax, and so on). The HP delivered, attaching pictures to blank emails, sending faxes, and making copies—the device required little human intervention after initial setup.

Our high-res scans were sharp, displaying good detail, color, and shadow depth, and scanning was quick. We scanned negatives at 600, 1,200, and 2,400 dpi, and clocked average times of 31 seconds, 68 seconds, and 125 seconds, respectively.

We should note that in our first tests, we discovered a bug that caused an uncorrectable blue cast in scans above 1,200 dpi on five different Macs with three different 7400c scanners. Our alert to HP resulted in a new version of PrecisionScan Pro (3.0.2), which should ship with all new scanners by the time you read this (you can also download the update at [www.hp.com/cposupport/swindexes/hpscanjet728407\\_](http://www.hp.com/cposupport/swindexes/hpscanjet728407_)

[swsp.html](http://swsp.html)). We are happy to report that the patch certainly cured this scanner’s blues.

Though film and transparencies scanned well, the included transparency adapter has its limits—it only has inserts for mounted slides and 35mm film. There’s nothing available to hold our more esoteric formats, such as 110 or 2 1/4-inch film (HP has no plans to make any, either).

Curiously, HP opted not to support FireWire, so scanning at extremely high resolutions is relatively sluggish. Though the company is looking into USB 2, this upgrade seems a little shortsighted for Mac users with FireWire. Nevertheless, the HP ScanJet 7400c produces great scans, and its hearty resolution is a treat for those who digitize film.—Paul Yoon

**good news:** 2,400-dpi resolution. Speedy scans. Solid automatic features. **bad news:** No FireWire. Transparency adapter supports only two formats.



## Double Duty

**T**he 7400c gets its speed boost from the one-two combination of a 600-dpi linear-pixel sensor and a 2,400-dpi staggered-pixel sensor. Used in tandem, these sensors provide speed for previews and low-res scanning, and detail for hi-res scans. The sensors’ staggered arrangement allows for more photodiodes per inch, since they’re smaller and laid out in a hexagonal pattern instead of a gridlike pattern. Though similar to setups used by other companies in the past, this specific technology remains exclusive to HP through the end of November 2001.



PHOTOGRAPH BY AARON LAUER

PHOTOS COURTESY OF PAUL YOON



At 600 dpi, this film negative scanned quite clearly—dust specks included—but isn’t large enough to print an 8 by 10 satisfactorily.



At a meaty 2,400 dpi, our squid has enough resolution to be *SquidAddict*’s cover boy.



# DoubleTalk 1.0

## utilities

**Company:** Connectix

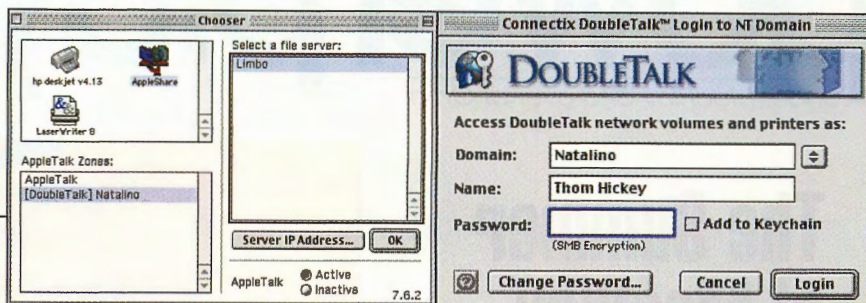
**Contact:** 650-571-5100, [www.connectix.com](http://www.connectix.com)

**Price:** \$99 (SRP)

**Requirements:** Power Mac, Mac OS 8.1-9.1, 24MB RAM, 5MB free hard disk space, CD-ROM drive

**L**ike mosquitoes, Windows PC networks are everywhere, and eventually you may have to connect your Mac to one. Nobody can make that chore fun, but Connectix DoubleTalk will at least make it quick, painless, and relatively inexpensive.

With DoubleTalk, you can transfer files to and from a networked PC running most versions of Windows (including Windows 98, NT, ME, and 2000). You can also print to Windows-managed PostScript printers on the network and access password-protected resources managed by a network



Once you log on to the network via DoubleTalk, you can access Windows servers from the Chooser as you would in AppleTalk.

server. The program works with standard Windows NT server networks as well as peer-to-peer networks. The beauty of DoubleTalk is that it requires little or no Windows networking knowledge on your part and almost no assistance from your possibly Mac-ignorant IT guy.

Installing and configuring DoubleTalk couldn't be easier. All you need to know is the name of your domain or workgroup, your user name, and your password. Once DoubleTalk is running, you can access Windows network resources—including PostScript printers—through your Mac's Chooser, much as you would do in an AppleTalk network. In our tests, the program worked without a hitch. Keep in mind that

the utility is not compatible with prevalent Novell networks.

DoubleTalk is incompatible with Network Browser, so you can't get around the Chooser's 512-server limit, which potentially poses a problem on a very large network. Connectix currently has no plans to provide Mac OS X support. These reservations aside, if you're looking for a cost-effective way to connect your Mac to a Windows network, DoubleTalk is hard to beat.—Eamon Hickey

**good news:** Easy, relatively inexpensive access to Windows networks. **bad news:** One-way networking only.



spiffy

Software  
Sales

69

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# powerplay

Under MacPlay and over at Omni...

## The Summer of MacPlay

Games? Yes. Chairs? No.

**T**he request was a tad unusual: "Would you mind bringing chairs?" "Um...OK..."

We've set up a lot of meetings at a lot of conferences, but our recent meeting with MacPlay at E3 may well be the first time we've ever been asked to provide seating. We gamely agreed—after all, we've come to expect the unexpected from MacPlay's marketer, Jason Whong (this is a man who has eaten bugs and who walked around as a "living booth" when he represented Ambrosia Software).

It was worth it. MacPlay, the once-dead imprint that United Developers revived last October (Interplay killed its MacPlay unit back in 1998), has a full slate of games ready for release during the second half of this year. We covered *Baldur's Gate 2* last month (*PowerPlay*, Aug/01, p58), so let's take a look at the pair of heavy hitters that will follow it late this summer. If you're a real-time strategy (RTS) fan, get ready for the end of the long, long drought that followed Blizzard's *StarCraft*.

### Sacrifice

In *Sacrifice*, one to four players control armies that battle in a vast, fantasy-inspired landscape. Resource management is



In *Sacrifice*, your wizard can unleash massive devastation upon his enemies.

deemphasized (if not entirely absent, as in *Myth*); you gain spells and creatures through combat. The battlefields are *huge*; you can zoom out to get a grand strategic view or zoom in to watch individual battles. Shiny Entertainment (of MDK fame) originally developed the game, so you can expect an offbeat sense of humor. (If you've never played MDK, find an old copy and try it. The game is almost indescribably funny, including weapons like "the world's most interesting bomb ever," which enemies gather to examine before it blows them up.)

You play a powerful wizard who has allies and enemies among five gods. As

your forces kill enemies, you can harvest their souls, then use them to create your own armies. If an enemy kills your wizard, that doesn't remove you from the game (though it does crimp your style a bit), but if another wizard desecrates the altar of your chosen god, it's all over for you.

### Giants: Citizen Kabuto

*Giants: Citizen Kabuto* will appeal to anyone who liked the Steve Jackson Games classic, *Ogre*. Kabuto, a powerful giant, finds himself fighting two separate (and very different) hostile forces called the Meccaryn and the Sea Reapers. Up to ten players can



Ouch! Don't worry too much; in *Sacrifice* you remain in play until another player desecrates your patron's altar.



In this *Giants* screenshot, a Sea Reaper character has just found Kabuto. This could get ugly.



# Omnipotent Gamers?

An Interview with The Omni Group's Tim Wood

**A**s Mac OS X rapidly becomes the focus of the Macintosh gaming world, The Omni Group is emerging as one of the leading porting houses. We spoke with Senior Engineer Tim Wood about the company's Mac gaming plans.—*JS*

**MA:** What project are you working on now? What other projects have you worked on?

**TW:** I'm putting some finishing touches on our Oni port, helping id [Software] get the new Quake III patch ready for Mac OS X, and working on other game ports. I also work on various developer-tool products that Omni is selling or will be selling soon.

**MA:** How did Omni get started?

**TW:** The three founders—myself, Ken Case, and Wil Shipley—went to the University of Washington together. Wil got contracted by NeXT to work on a project for the William Morris Agency. Then they brought on Ken and me, and we've been writing software for NeXT (and now Apple) platforms ever since.

**MA:** How did Omni get into porting games to Mac OS X?

**TW:** Wil pestered John Carmack with bug reports for the NeXT port of Doom II until he sent the code and told us to fix them ourselves.

compete at once. The game is usually described as "action with RTS elements"—the basic gameplay is shooterlike, but Meccaryn and Sea Reaper players can get the natives of the islands (little robed guys with giant heads called Smarties) to build bases for them or (in Kabuto's case) give them new abilities. These bases are crucial for Meccaryn and Sea Reaper characters, since without bases you can't purchase new weapons or spells.

MacPlay is betting heavily on Mac OS X, to the point that Giants will *only* appear on the Mac as a Mac OS X-native game. The Omni Group ([www.omnigroup.com](http://www.omnigroup.com))—familiar to Mac OS X users for its Web browser, OmniWeb—will provide the port.—*Ian Sammis*



In Giants, when you play a Meccaryn character—basically a space Marine—the game resembles a shooter.



The Omni Group has been around for years, and with the advent of Mac OS X it started developing for the Macintosh.

**MA:** What's the best thing about developing games under Mac OS X?

**TW:** The stability of the OS is really great. I can debug games without worrying about crashing the whole machine. The preemptive kernel is really nice, too, since I can browse the GL docs online while the game or edit source is building in the background without any major slowdown.

**MA:** What's the worst thing about developing games under Mac OS X?

**TW:** Having to sleep occasionally.

**MA:** You've been developing applications since the NeXT days. How is it different to be working as part of the Mac development community instead of the NeXT community?

**TW:** The biggest change is the addition of an actual market of customers. Beyond that, we now have access to all the cool Apple technologies and hardware.

**MA:** Which of your upcoming games should we watch for?

**TW:** We should be releasing our port of Oni soon. There will also be an updated release of FAKK2, and once we get the code for the Star Trek Voyager: Elite Force patch, we'll integrate that and release something as soon as the publisher gives the go-ahead.

## SCREENSHOT OF THE MONTH

If you weren't already worried about Blizzard's bovine fixation, you will be when you run into the halberd-wielding cattle in Diablo II's Secret Cow Level.



### Artist's Statement

Foot-and-mouth disease at its worst. Moo...—*Michael Entringer*

Send your best screenshots to [letters@macaddict.com](mailto:letters@macaddict.com) with the subject line "Screenshot of the Month" if you crave fame and glory (or at least fleeting satisfaction upon seeing your screenshot in a magazine).



# how to

GC, CGI, and other acronyms (GCCGIAOA).

## Find and Use CGI Scripts with Mac OS X

by Ian Sammis

### WHAT YOU NEED

- Mac OS X
- A Web connection
- A slightly geeky nature

With Mac OS X, your Web tools are just a tad more powerful.



ILLUSTRATION BY ANATOLY CHERNISHOV



This stuff's for the pros.



It'll take some effort, but you can do it.



The fundamentals, if you will.

**W**ith the advent of Mac OS X, building Web sites on Macs has taken a giant leap forward. Instead of the serviceable but slow Personal Web Sharing, Mac OS X uses the powerful Apache Web server. Suddenly, every computer running Mac OS X sports a professional-level Web server right out of the box.

That's cool enough by itself, but it gets better. Because Mac OS X runs atop a BSD core, you can easily use all those clever little CGI

scripts (Web counters, bulletin boards, news servers) to transform static Web sites into interactive environments like the forums on MacAddict.com ([www.macaddict.com/community/forums](http://www.macaddict.com/community/forums)). While CGI scripts aren't new, getting them to run on the Macintosh platform has traditionally been tricky—since most scripts were designed with Unix in mind. Thanks to the BSD layer of Mac OS X, those scripts now run with only minor modifications. We'll take you through the process of finding, installing, and using CGI scripts on your Web site.

## CGI = Common Gateway Interface

**F**or the most part, Web servers are simple programs. Unlike browsers, which have to parse HTML, lay out text and images, and interpret scripting languages, Web servers traditionally do little more than send requested documents verbatim to connected browsers. (In the Terminal, type `wget URL` to download the raw code that Web servers send to browsers.)

Of course, Webmasters soon grew bored with static documents—they wanted to provide more interesting content and respond to user requests. One early mechanism for building interactivity into Web sites was Common Gateway Interface (CGI). A CGI script is a program placed in a special folder. When a browser requests a document from that folder, the Web server doesn't just send the program to the browser as it normally would—instead, it

runs the program and sends the *output* to the browser.

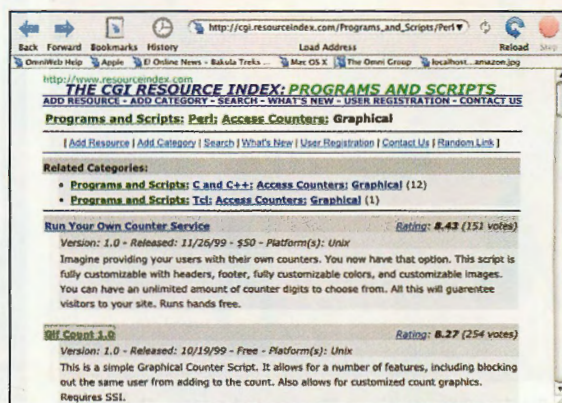
In principle, CGI scripts can consist of compiled programs, shell scripts, or anything else that spits out text. In practice, most of them are PERL scripts. PERL, which stands for Practical Expansion and Report Language (or less formally, Pathologically Eclectic Rubbish Lister), is an oddly structured but phenomenally useful scripting language that some call “the duct tape of the Internet.”

In Mac OS X, Apache uses the CGI-Executables folder as the special CGI folder—that is, Apache will assume that any URL starting with `/cgi-bin/` refers to files inside CGI-Executables, and that it should execute such files instead of simply sending them. You'll find the CGI-Executables folder in the WebServer folder of the Library folder at the root level of your startup disk.

### 1 Find the Scripts

To get started, find a CGI script that does what you want it to do. As you'd expect of a tool created primarily for Web-site designers, CGI has no shortage of archives on the Web (if you're in a masochistic mood, type *CGI script archive* into a search engine and wade through the results). Probably the best source we found, the CGI Resource Index (<http://cgi.resourceindex.com>) lists well over 2,000 PERL-based CGI scripts, along with a few hundred scripts in other languages.

Browse through the archive and see what sorts of scripts are on offer. For the purposes of this article, look for a graphical access counter (one of those cute little odometers that counts the number of people who have checked out your site). Click Programs And Scripts, then PERL, then Access Counters, then Graphical to see a list of counters you can use. We'll choose Gif Count, a highly regarded free counter. Download the script by following the necessary links.



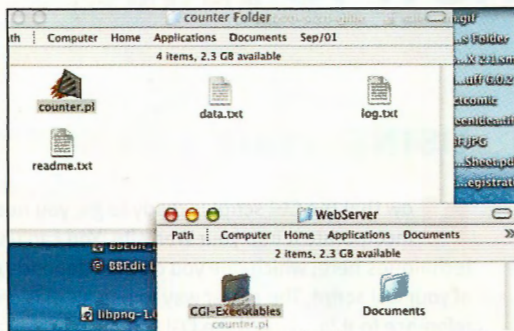
The CGI Resource Index is a great place to look for scripts.



## 2 Move Your Script

To make your Web server realize that the CGI counter is a script and not just a funny-looking Web page, you have to place the counter in the CGI-Executables folder. Drag and drop the CGI script itself (it typically ends with a .pl or .cgi extension) into the CGI-Executables folder, located in the WebServer folder inside your startup drive's Library folder.

Moving the counter script into CGI-Executables tells your Web server to treat it as a script instead of a simple Web page.

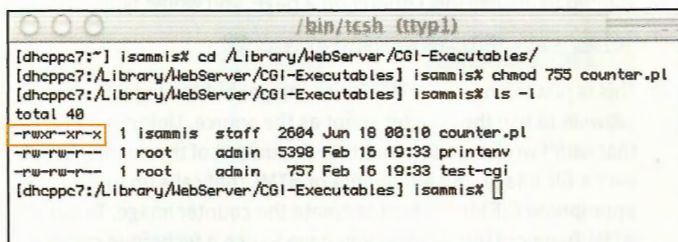


## 3 Set Permissions

If you try to call up the CGI script now, you'll get an error. Like most Unix-based systems, Mac OS X requires you to tell it explicitly which files it can execute—so even though the script is now in CGI-Executables, Mac OS X won't let Apache fire it up! To clue in Mac OS X, you need to make your first journey into the Terminal. Launch the Terminal and type the following commands:

```
cd /Library/WebServer/CGI-Executables
chmod 755 counter.pl
```

The first command tells the Terminal to consider files in the CGI-Executables folder; the second command tells Mac OS X that everyone can read and execute counter.pl, but only the file's owner (in other words, you) can edit it.

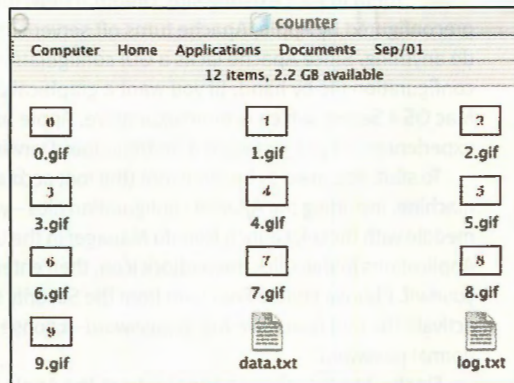


Here, we used the `ls -l` command to make sure `chmod` worked. The `xs` mean counter.pl is now executable.

## 4 Place Auxiliary Files

Many CGI scripts rely upon additional files to store extra information, cache output, and so forth. The counter, for example, expects to find a folder named *counter* (don't change the capitalization—the Unix core cares, even though Mac OS doesn't) containing the files data.txt and log.txt, as well as ten GIF files named 0.gif through 9.gif that it can use to build numbers. (The GIF files contain images of the numbers 0 through 9; by creating different images, you can present your site's visitors with anything from a traditional odometer design to a fancy animated effect.) To keep things simple, create the counter folder in the Documents folder that sits alongside CGI-Executables inside the WebServer folder.

If you're wondering how you'd ever know where to place auxiliary files on your own, it's usually pretty easy: Take a look at any read-me files or other documentation that comes with the scripts you download. While we know the Macintosh way is to do without documentation, the vast majority of these scripts were written by people who have never heard of the Macintosh way and who certainly didn't go out of their way to make things easy for you. Read the directions, or you'll find yourself wasting a lot of time.



The counter folder should have 0.gif through 9.gif, along with the two data files that came with the script.

## 5 Configure the Script

Now adjust some parts of the actual script for Mac OS X specifically. Open the script counter.pl in a text editor to make the necessary changes.

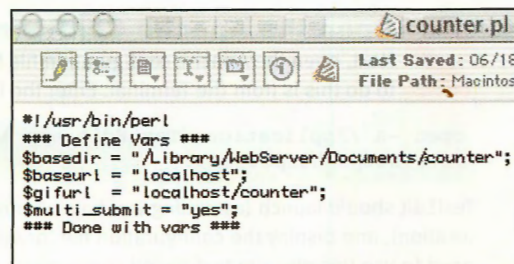
Start by checking the first line of the script. PERL scripts should start with a line that contains a number sign (#), followed by an exclamation point (!), a space, and then the path to your `perl` command. On a standard Mac OS X system, this should read:

```
#!/usr/bin/perl
```

If you see references to local (as in `/usr/local/bin/perl`), or to some other path entirely, make the first line match the path above.

According to the instructions that came with the counter, you have to replace `$basedir` with the full path to your counter directory, as shown at right. You also have to change `$baseurl` to the WebServer's URL (`localhost`, if you're just planning to test the script on a single machine) and `$gifurl` to your counter folder's URL (`localhost/counter`).

You can test your counter by browsing to `http://localhost/cgi-bin/counter.pl`; if all went well, you will see your counter.



Since PERL came with Mac OS X, it's in `/usr/bin/perl`, not `/usr/local/bin/perl` (this follows standard Unix conventions, which you can mostly ignore in Mac OS X).



## USING YOUR CGI SCRIPT

**N**ow that the CGI script is ready to go, you need to incorporate it into your Web site. You can use two basic techniques here; which one you choose depends on the design of your CGI script. The easier way to use a CGI is simply to place a reference to it in a link (if the CGI script generates a page) or in an IMG tag (if the script produces a graphic). For example, if you wanted to display this counter on a page, you would type:

```
<IMG SRC="cgi-bin/counter.pl">
```

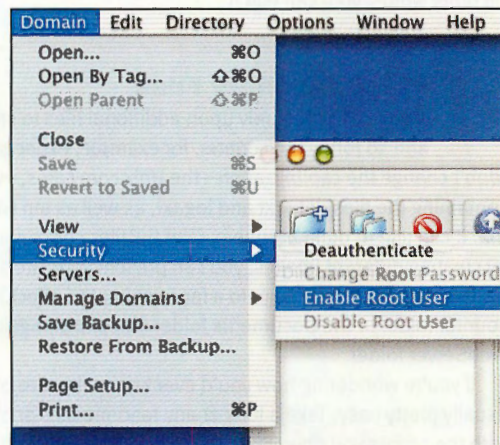
This is just the normal HTML for an image, but the tag tells the browser to use the counter script as the source. Unfortunately, that won't work for a GIF counter—the output of the counter script isn't a GIF image, but a fragment of HTML that calls up the appropriate GIF files in turn to create the counter image. To put an HTML fragment into a page, you have to use a technique called a *server-side include*. Here's how to build one into your site.

## 1 Become Root

Server-side include commands aren't very difficult to write—you can easily add them to your existing site. Unfortunately, there's a much trickier initial step. As preconfigured by Apple, Apache turns off server-side includes, so the commands won't do anything. Since Apache lacks a GUI configuration tool, you'll have to edit the configuration file by hand. (If you want a graphical configuration tool, you need to buy Mac OS X Server, which is more expensive. Apple basically charges more for pleasant experiences—if you just want a no-frills Unix, Darwin is completely free!)

To start, you need to become root (the root account has access to every part of the machine, including the Apache configuration files—you're not normally allowed to meddle with these). Launch NetInfo Manager in the Utilities folder inside your Applications folder. Click the padlock icon, then enter your password to authenticate yourself. Choose Enable Root User from the Security submenu of the Domain menu to activate the root user. Give root a password—choose something different from your normal password.

Finally, log out (choose Log Out from the Apple Menu), then log back in as root.



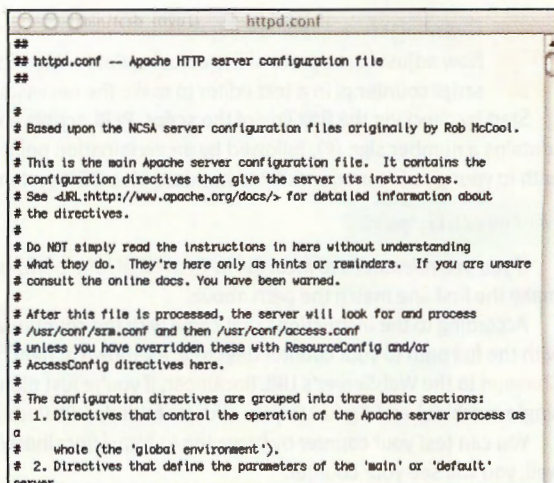
Once you enable root, you can freely edit Apache's configuration files.

## 2 Open the Apache Configuration File

Next, open the Apache configuration file for editing. The easiest way to do this is from the Terminal. Enter the following commands:

```
open -a /Applications/TextEdit.app \  
/etc/httpd/httpd.conf
```

TextEdit should launch (assuming you haven't moved it from its original location), and display the configuration file for Apache. The reason you need to use this obscure text-based command is that the etc folder is hidden—there's no easy way to browse to it in the Finder.



Yeah, you had to use a cryptic command—but it got the configuration file open, and not in emacs.

## Security!

**B**e very, very careful with CGI scripts. Running a CGI script from an untrustworthy source is very, very dangerous—unlike Apache, which restricts itself to your WebServer folder, CGI scripts have the run of your system. A hacker who wants access to your system can easily write an innocent-looking CGI script that will hand over your password file, open a security hole, or otherwise behave maliciously. Here are some steps you can take to protect yourself:

**Learn PERL.** Most CGI scripts aren't terribly complicated—with a rudimentary knowledge of PERL, you should be able to verify for yourself that the script does what it claims, and *only* what it claims.

**Don't trust the sticky bit.** If the output from `ls -l` in the Terminal shows that the CGI script is owned by root and has permissions starting with `s`, the script has permission to run with root permissions—that is, it can modify any file on your system. Unless it has a very good reason to do so, this is likely a trap.



### 3 Turn On Server-Side Includes

Look for a line that says **Options Indexes FollowSymLinks MultiViews**. That line tells Apache which basic options the Web server should use—whether Apache should follow symbolic links (in Mac OS parlance, *aliases*) and so on. Add the word **Includes** to the end of this line to tell Apache to allow server-side includes.

Later in the file, you should see two lines that look like this:

```
#AddType text/html .shtml
#AddHandler server-parsed .shtml
```

Remove the number sign (#) character from each of these two lines. This tells Apache to look for server-side includes in any file that ends in .shtml. (Changing the file name helps preserve the performance of traditional HTML files—the server has to preprocess .shtml files to carry out the includes.)

Finally, if you plan to use server-side includes as part of your front page, you'll have to tell Apache to accept index.shtml as a front page. Look for a line like this:

```
DirectoryIndex index.html
```

After **index.html**, type a space followed by **index.shtml**. Now you can use either index.html or index.shtml as index files.

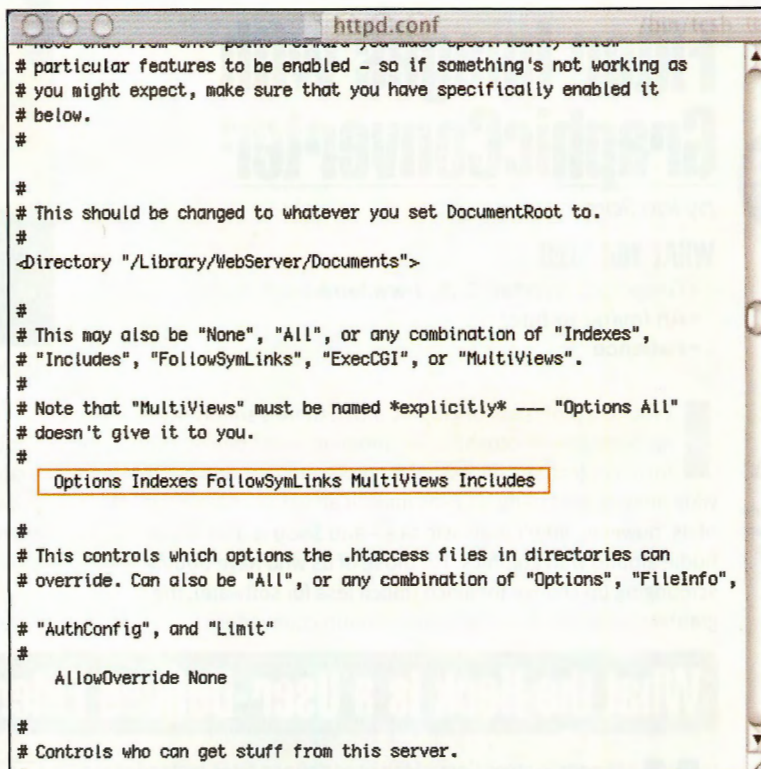
Save the configuration file and quit TextEdit. Log out and then log back in as yourself. Choose System Preferences from the Apple menu, then click Sharing. Restart Web Sharing (if Web Sharing is off, turn it on; if it is on, turn it off, then back on again).

### 4 Include the CGI Results

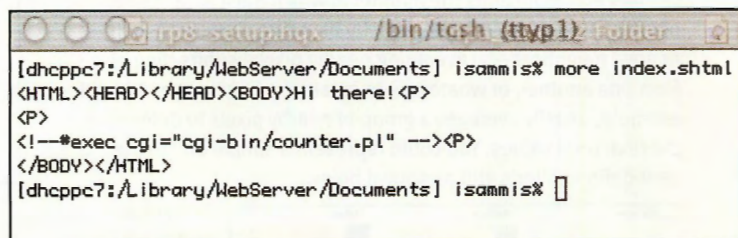
You're almost done. Next, change the name of the Web page that will use the CGI script from **file name.html** to **file name.shtml**, so the server will process any server-side include directives you add to the file. Now just enter a line to execute your CGI script—you should find the necessary command described in the documentation that came with your script. In the case of the counter script, enter:

```
<!--#exec cgi="cgi-bin/counter.pl" -->
```

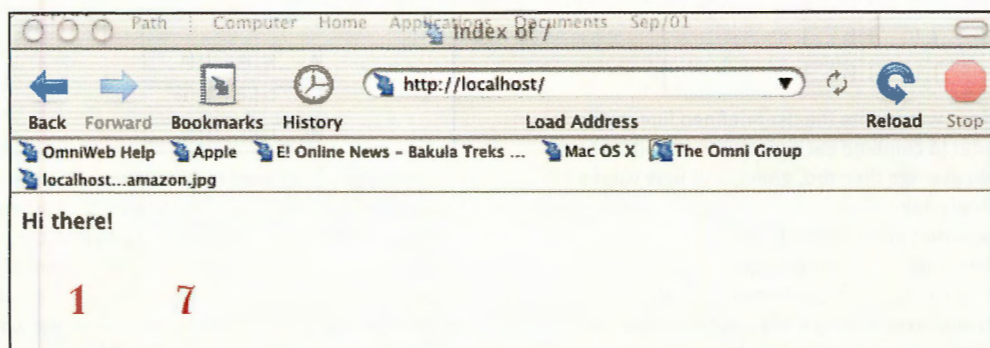
This tells the server to run the CGI script **counter.pl** from **cgi-bin** (remember, in Mac OS X, the latter command tells the server to look in CGI-Executables). That's it—now go have fun!



By adding the Includes option, you tell the server to allow server-side includes.



To check that things are working, we set up this "Hi there!" Web site, which should put the counter onscreen.



And there it is—perhaps the ugliest counter ever displayed. Time for some more work on 0.gif through 9.gif!

Ian Sammis is getting sleepy...so sleepy...



## Filter Images with GraphicConverter

by Ian Sammis

### WHAT YOU NEED

- GraphicConverter (\$25, [www.lemkesoft.com](http://www.lemkesoft.com))
- An image to filter
- Patience



If you're a professional graphic artist, there's simply no substitute for Photoshop. The program's vast power, support for the color features necessary for professional graphics work, and wide array of third-party plug-ins make it an indispensable tool. Most of us, however, aren't professionals—and \$609 is a lot to pay just to fiddle around with graphics. For those of us who have trouble scrounging up change for lunch (much less for software), the graphics program of choice is clear: GraphicConverter.



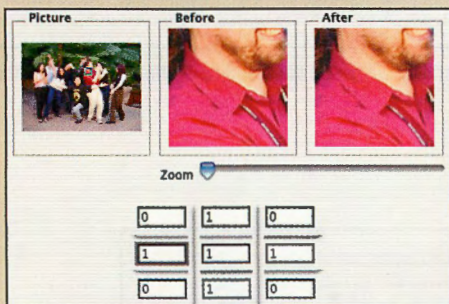
The filtering feature in GraphicConverter is tricky, but quite powerful.

GraphicConverter is an unusual beast. While it lacks most of Photoshop's raw power (no layers, only RGB graphics, and so forth), GraphicConverter has some unique abilities that make it a graphics powerhouse. Beyond its remarkable ability to handle darned near every graphics format ever devised, it boasts an odd but versatile tool: the user-defined filter. Here we show you how to use this incredibly versatile filter to achieve a wide range of standard—and not-so-standard—effects.

## What the Heck Is a User-Defined Filter?

Most people steer clear of the user-defined filter. Instead of the usual comforting array of sliders and buttons most filters display, it presents you with a grid of nine numbers arranged in three rows of three. What's going on here?

This grid represents the manner in which most simple filters operate. Many simple filters work by blending pixels with their nearest neighbors—by averaging nearby pixels, subtracting pixels from one another, or whatever—to create the final image. A blur, for example, usually averages a group of nearby pixels to determine the final pixel values. You could represent a simple blur in the user-defined filter's grid as shown below.



By combining each pixel with its four nearest neighbors, this filter blends sharp edges to soften them.

Entering these values into the user-defined filter tells GraphicConverter to combine each pixel with its four nearest neighbors, then average their red, green, and blue values to generate the final image.

If you replace the 1 in the center field with a -4, you create a filter that draws bright lines along edges, called an *edge-detection filter*. Since the *weights* (the numbers you enter in the dialog box) sum to 0, a completely uniform image becomes black, while a region where pixel values form edges become very bright.



Now the filter emphasizes edges instead of hiding them.

To emphasize the edges more dramatically, as shown below, multiply all the weights by some constant factor.



Now the filter dramatically emphasizes even the slightest pixel differences.

Often, you don't *want* to remove everything but the edges in your photos—instead, you simply want to sharpen the edges while leaving your original photo more or less intact. By increasing the number in the center, you combine the original image with the one the edge-detection filter creates, leaving a sharpened image. This is how filters that sharpen the edges of an image work.

Experiment with the user-defined filter—once you get a handle on how it works, you can use it to create a wide range of effects.



## PENCIL SKETCH

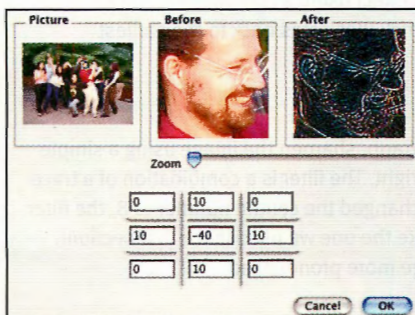
**F**requently, you want to make a digital photograph resemble the sort of sketch a skilled artist might create with traditional media like pens or pencils. A sketch typically emphasizes an image's

boundaries and washes out its interiors. By modifying an edge-detection filter (see "What the Heck Is a User-Defined Filter?", p70), you can tell GraphicConverter to generate a sketch.

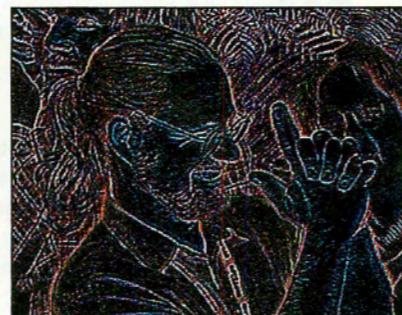
### 1 Find the Edges

After you load the image into GraphicConverter, choose User Defined Filter from the Effect menu. Enter the numbers shown at right. When you click OK, the image should take on a chalklike look. If this is what you want, skip to step 3 below.

If the edges are too sharp or too light for your taste, choose Undo from the Edit menu and repeat the above with different sets of numbers. As long as the five weights (the one in the center and its four nearest neighbors) sum to 0 and the four neighbors have weights, you are tracing edges—the larger the number in each square, the heavier the edges will appear.



You can adjust the numbers in the fields to trace the edges lightly or heavily.



The image now resembles a chalk picture.

### 2 Invert

If you want to simulate a traditional sketch on paper, you need to invert the image—that is, make the background color white and the edges black. Choose Invert from the Picture menu to invert the image and make it look like a traditional sketch.

Much better—but it looks like someone ran amok with a colored pencil.



### 3 Convert to Gray Scale

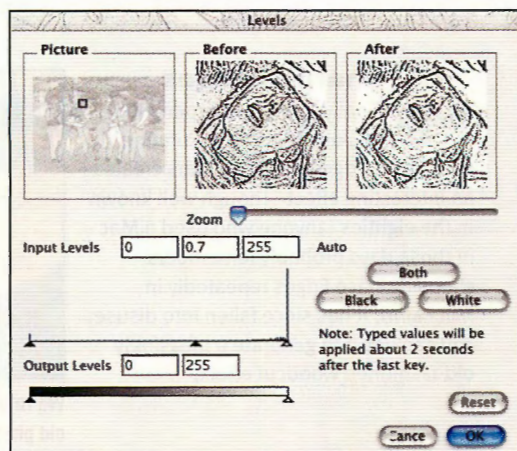
Because the user-defined filter detects color and brightness changes, the filtered image may look as though you airbrushed areas such as faces and clothing. To avoid this effect, convert the image to grayscale: From the Picture menu, choose Colors, then Grayscale, then 256 Grays.

Ah, there we go—with the tint removed, the image looks much more like a pencil sketch.



### 4 Brighten Up

You're almost there. The image should strongly resemble a pencil sketch, though the brightness may be a bit off—all that discarded color information tends to make images a bit dingy and gray. To brighten the image, choose Levels from the Picture menu, then move the gray gamma triangle slightly to the right. The image should now have sharply defined edges with brighter centers.



By changing the gamma, you leave black and white pixels alone, while brightening gray pixels.

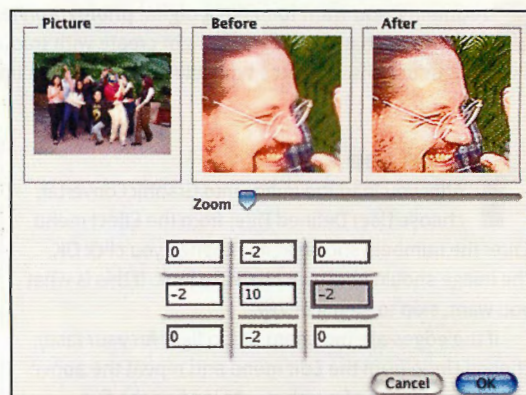


## WOODCUT

**N**ext, try for a sepia-toned woodcut effect using a combination of tints and sharpen filters, along with a trick that dates back to the earliest days of Macintosh graphics.

### 1 Change the Path

Starting with the original photograph, sharpen the image using a simple user-defined filter, as shown at right. The filter is a combination of a trace-edges filter and the main image (if you changed the central number to 8, the filter would just be an edge-detection filter like the one we used in the last section). Click OK to make the edges in your image more pronounced.



This is among the simpler filters you can use to sharpen the edges in an image.

### 2 Go to Gray

Since you're trying to simulate a woodcut, you don't really need all those colors in the image. To convert the image to grayscale, from the Picture menu, choose Color, then Grayscale, then 256 Grays.

If you leave the image grayscale, you can't tint it. Convert the image back to full color by choosing Change To 16.7 Mill. Colors from the Color submenu of the Picture menu. The image now contains color information, but remains grayscale.



Although the edges are more pronounced, this still looks nothing like a woodcut.

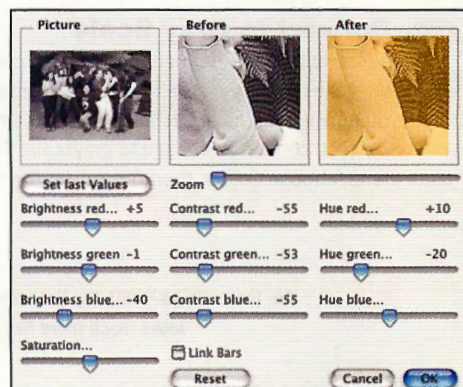


Without the distraction of colors, the sharpening effect of the user-defined filter is much more obvious.

### 3 Tint the Image

Choose Brightness/Color from the Picture menu to bring up the Brightness/Color dialog box. This is a key tool in GraphicConverter—since you can't directly and separately edit each channel as you can in Photoshop, the only way to tint images is via the Brightness/Color dialog box, where you independently control the brightness, contrast, and hues of the red, green, and blue channels.

Make the adjustments shown at right. This will change the basic tint of the image from gray to sepia.



Wood tones are tricky—they lie in an incredibly small region of the RGB color space, so it's easy to tint the image with too much red or yellow.

### 4 Sharpen Edges

Finally, run the sharpen filter you used in step 1. Running successive edge-detection filters creates an interesting effect—though well known in the eighties (anyone who used a Mac in those days probably remembers choosing Trace Edges repeatedly in MacPaint), it has since fallen into disuse. You can use it to generate a pleasingly old-fashioned woodcut effect.



We're getting closer, but this looks more like an old photograph than like a woodcut.



Ah, that did it—the second sharpen filter created the grooves you'd expect to see in a carving.

Ian Sammis used GraphicConverter long before he was introduced to Photoshop.



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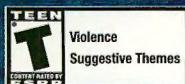
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# ask us

Or sU ksA, if you're looking in a mirror.

## Questions?

Submit technical questions or helpful tips directly via email ([askus@macaddict.com](mailto:askus@macaddict.com)) or c/o **MacAddict**, 150 North Hill Dr., Brisbane, CA 94005.

**Q** It seems so obvious: I should be able to connect a cell phone to my new PowerBook for wireless Internet access when I'm on the road. But I am having a heck of a time finding out how to do this on my Mac. I know it has to be possible.

**A** Yes, it does seem like a perfect fit, and you are correct: It is possible. You have to overcome some issues, though, before you can dial in from anywhere. The first is the ever-present PC bias of phone makers and service providers. The second is the large number of phone styles, as well as connection types and plans. That said, you can use just about any data-capable cell phone with your PowerBook to access the Internet wirelessly.

When you configure your cell phone, remember that you won't be using your PowerBook's normal modem setting to dial out. In fact, you don't use your PowerBook's modem at all! Instead, you connect as you would with an external modem, via either serial or USB (your cell phone itself acts as the modem when you dial out in this way). As long as your phone is data capable and has data access enabled, you should be able to use it to dial your service provider.

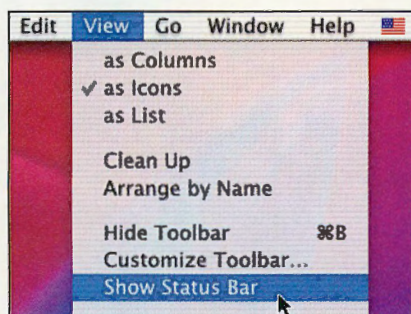
The next challenge you face is getting the required cable to connect your phone to your laptop. Sprint sells a cable for about \$99 that ends in a 9-pin serial (PC type) connector. You'll need an adapter to connect this to your Mac. The Keyspan PDA adapter (\$39, [www.keyspan.com](http://www.keyspan.com)), a popular USB solution, provides the necessary 9-pin serial port.

What about software? Luckily, since your computer sees the phone as just another modem, you can use the Remote Access control panel to dial and connect. You need some special modem scripts so Remote Access will know how to handle any special commands the phone's modem may call for. You can find these scripts on the Web: check out James Sentman's ([www.sentman.com](http://www.sentman.com)

[/mac\\_pcs.html](#)) page, which describes how to use SprintPCS with your Mac, and Ross Barkman's home page ([www.taniwha.cwc.net](http://www.taniwha.cwc.net)), which provides a large number of modem scripts.

**Q** In Mac OS 9, the size of the disk and the available disk space show at the top of my windows. Apple seems to have eliminated this very important feature from Mac OS X—how can I get it back?

**A** For reasons we can only speculate about, Apple made the critically important disk-information display optional in Mac OS X. Fortunately, enabling it is easy—just select Show Status Bar from the View menu.



That disk information is just as important in OS X as it was in older Mac OS variants.

**Q** I just purchased a new Apple 17-inch flat-panel display. How can I hook it up to my old blue-and-white G3?

**A** Apple's newest monitors ship with a proprietary ADC (Apple Display Connector) cable. Since only the very latest

G4s and Cubes have ADC ports, you might think you can't use the flat panels with older Macs. That's *almost* true, but if you have a video card with a DVI (Digital Video Interface) port, you can adapt it to drive an ADC monitor. You need a DVI-to-ADC converter box, such as the extendit from Gefen ([www.gefen.com](http://www.gefen.com)) or the DVIator from Dr. Bott ([www.drbott.com](http://www.drbott.com)). These conversion devices provide external power for your ADC monitor while sending the DVI signal to the appropriate pins of the ADC connector (ADC is an expanded DVI interface; the cable carries a combination of DVI, power, USB, and VGA signals and provides a separate power button). While they're not exactly elegant, they get the job done.

**Q** I love my new iBook, but I hate hearing the same old startup chime again and again. How can I have my iBook start up with a different sound when I press the start button?

**A** This question eventually comes to plague every new Mac user. The Mac OS has always allowed lots of customization, and the startup chime seems like the perfect place for that extra personal touch. Unfortunately, the startup chime on every Mac is built into the actual hardware on the logic board, deep in the bowels of your computer. The startup chime plays even before anything loads from your hard drive! The best you can do is place a system sound (one that you record in the Sound control panel, for example) into your Startup Items folder, where it will play a bit later in the startup process.



Alas, poor monkey! Never use a hammer on a PowerBook.

Scritty

ILLUSTRATION BY S. BRITT



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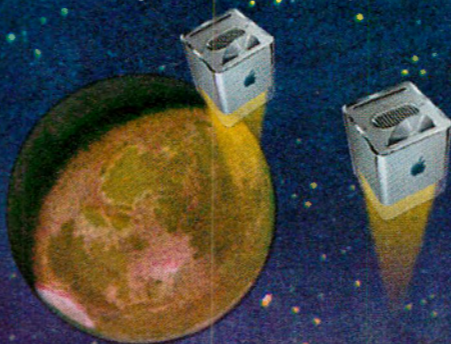
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# MacAddict

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**Q** My school has started using iMovie for our end-of-year projects. We have a digital camcorder and an iMac to produce our movies. I love all the special effects but want to know how to create a freeze-frame in iMovie.

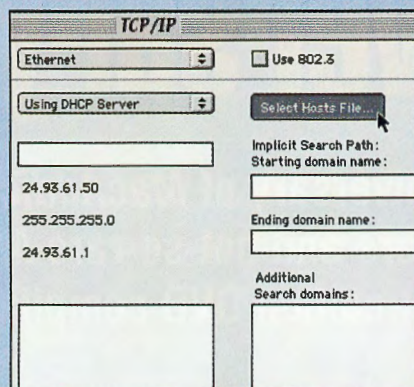
**A** Creating a perfect freeze-frame shot in iMovie is easy as long as you understand your options. To create the effect, start by placing the Playhead (the little marker that indicates which part of the movie you're watching) just below the frame you want to freeze. Choose Split Video At Playhead from the Edit menu. Many effects in iMovie (such as inserting titles into a video) require splitting the video, meaning that you cut a single video clip into two separate clips. When you split the video, the Playhead splits to indicate that there's an empty space between the two clips. Choose Create Still Image from the Edit menu to place the frozen image as a clip in the Shelf. Drag this clip from the shelf to your timeline, where you split the Playhead earlier. You can modify this clip just as you would any other. When you play back the video, the movie should freeze when it reaches the point where you split the clip, then resume playing when your frozen clip ends.



iMovie freeze-frames are way cool!

**TIP** If you're learning how to use the command line in Mac OS X, you'll love the `man` command. Typing `man command` looks up the manual page for that command and displays it page by page in the Terminal. To learn more about `man` itself, type `man man`. If you aren't sure exactly what command you want, you can index the manual pages by typing `/usr/libexec/makewhatis`, then search the indexed pages for key terms by typing `apropos keyword`. Have fun!

## The Slaying of the Adverts



Using a custom Hosts file may eliminate some of that nasty Web advertising.

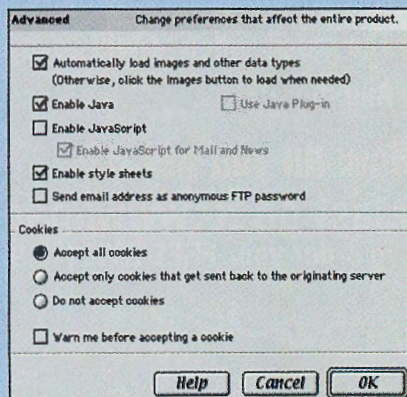
**Q** I really hate going to Web sites where extra windows pop up, usually containing advertisements. Is there a way to stop this annoying behavior? In fact, is there a way to prevent advertisements from showing up at all?

**A** Over the last year, Web sites have had a hard time staying afloat. The ads are the only reason most Web sites remain free to the public. While the bombardment of online ads can be overwhelming at times, it may be the lesser of two evils. That said, here's how to keep the flood of ads to a manageable—or at least bearable—level. Keeping in mind that the only way you can avoid seeing *any* Web ads is to stop using the Web entirely, you can try several methods to keep ads from burying your browser. The shareware program WebFree (\$20, [www.falken.net/webfree](http://www.falken.net/webfree)) claims to block most ads. While the utility hasn't been updated in several years, it appears to work with Mac OS 9.1.

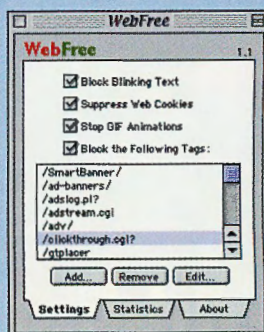
If you want to attempt something a bit more challenging, you can try to keep your computer from finding ads by using a custom Hosts file. This is a file that tells your computer how to translate certain computer names (for example, [www.macaddict.com](http://www.macaddict.com)) into IP numbers, circumventing the usual DNS (domain name server) lookup process. By creating a Hosts file with the names of some of the more common ad servers, you can keep your computer from finding advertisements, leaving your browser with broken-picture icons where the ads would otherwise appear. Head on over to [www.ecst.csuchico.edu/~atman](http://www.ecst.csuchico.edu/~atman)

/spam/adblock.shtml and get the Host file list. Name the downloaded list *Hosts* and move it to your computer's Preferences folder. Next, open your TCP/IP control panel and click the Select Hosts button (if you don't see a Hosts button, choose User Mode from the Edit menu and change your mode to Advanced). Find your Hosts file and click OK. Once you restart your computer, you'll see fewer ads on the Web pages you visit. Configuring Mac OS X to use a local hosts file is quite a bit trickier; if you want to try anyway, browse on over to [www.osxfaq.com](http://www.osxfaq.com) (even if you don't want to try, you should take a look at the site; it's chock-full of interesting information).

As for those annoying pop-up windows, you can easily disable them by turning off JavaScript in your browser's preferences. But turning off JavaScript can keep legitimate Web sites from working properly. Some browsers—notably iCab (iCab Company, [www.icab.de](http://www.icab.de)), Opera (Opera Software, [www.opera.no](http://www.opera.no)), and OmniWeb (The Omni Group, [www.omnigroup.com](http://www.omnigroup.com))—actually give you the option to skip pop-up windows without otherwise affecting JavaScript-enabled sites.



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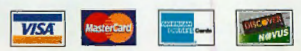
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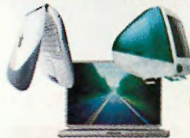
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for iBook, G4 Titanium,  
 PowerBook G3, 1400/5300/190/150,  
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|  |          |
|--|----------|
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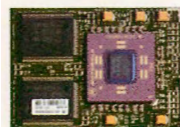
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## G3/G4 Upgrades

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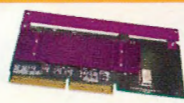
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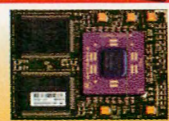


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| #957913 | Handspring Visor Edge Blue       | \$299 <sup>†</sup>   |
| #953364 | HP PhotoSmart 315 Digital Camera | \$199 <sup>99†</sup> |
| #959033 | Canon ZR20 DV Camcorder          | \$529 <sup>99†</sup> |

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| <b>Apple Titanium PowerBook G4 Series</b> |         |         |       |          |           |            |           |                   |           |                |          |        |          |              |
| #956566                                   | G4      | 400     | 128MB | 256MB*   | 384MB     | 10GB       | Yes       | DVD-ROM           | Two       | One            | Yes      | Yes    | \$2,594* | \$73/mo*     |
| #956567                                   | G4      | 500     | 256MB | 256MB*   | 512MB     | 20GB       | Yes       | DVD-ROM           | Two       | One            | Yes      | Yes    | \$3,494* | \$98/mo*     |
| <b>Apple Power Macintosh G4 Series</b>    |         |         |       |          |           |            |           |                   |           |                |          |        |          |              |
| #956215                                   | G4      | 466     | 128MB | 256MB*   | 384MB     | 30GB       | Yes       | CD-RW             | Two       | Two            | Yes      | Yes    | \$1,694* | \$48/mo*     |
| #956216                                   | G4      | 533     | 128MB | 256MB*   | 384MB     | 40GB       | Yes       | CD-RW             | Two       | Two            | Yes      | Yes    | \$2,194* | \$62/mo*     |
| #957453                                   | G4 Dual | 533 (2) | 128MB | 256MB*   | 384MB     | 40GB       | Yes       | CD-RW             | Two       | Two            | Yes      | Yes    | \$2,494* | \$70/mo*     |
| #957951                                   | G4      | 733     | 256MB | 256MB*   | 512MB     | 60GB       | Yes       | CD-RW             | Two       | Two            | Yes      | Yes    | \$2,994* | \$84/mo*     |
| #956565                                   | G4      | 733     | 256MB | 256MB*   | 512MB     | 60GB       | Yes       | DVD-R/CD-RW Combo | Two       | Two            | Yes      | Yes    | \$3,494* | \$98/mo*     |
| <b>Apple iBook Series</b>                 |         |         |       |          |           |            |           |                   |           |                |          |        |          |              |
| #959626                                   | G3      | 500     | 64MB  | 128MB*   | 192MB     | 10GB       | Yes       | CD-ROM            | Two       | One            | Yes      | Yes    | \$1,294* | \$37/mo*     |
| #959627                                   | G3      | 500     | 128MB | 128MB*   | 256MB     | 10GB       | Yes       | DVD-ROM           | Two       | One            | Yes      | Yes    | \$1,494* | \$42/mo*     |
| #959633                                   | G3      | 500     | 128MB | 128MB*   | 256MB     | 10GB       | Yes       | DVD/CD-RW         | Two       | One            | Yes      | Yes    | \$1,794* | \$50/mo*     |

\*Professional installation fee of \$30 required for free RAM offer. Hurry, MacMall RAM promotion ends 9/17/01.

†SmartDisk VST Portable FireWire CD-RW offer fulfilled through mfr. mail-in coupon. Offer ends 9/3/01. Drive will not be included in initial PowerBook order.

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Buy the PowerBook G4 between 6/15/01 and 9/3/01, and you will receive a FREE\* CD-RW drive! Only 3/4" thin and FireWire bus-powered, the VST SmartDisk won't weigh you down. So now you can experience the power and versatility of the 1" thin, 5.3-pound mobile office, design studio and music library in one – AND create your own CD mixes wherever you go!



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plus  
Mac OS X\*\*  
**FREE**



**FREE\*  
CD-RW  
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Value!**

Starting At Only **\$2594<sup>98</sup>**

| G4 Processor  | <b>400MHz</b>                          | <b>500MHz</b>                          |
|---------------|--|--|
| Hard Drive    | 10GB                                   | 20GB                                   |
| RAM           | 128MB                                  | 256MB                                  |
| Optical Drive | DVD                                    | DVD                                    |
| TFT Screen    | 15.2"                                  | 15.2"                                  |
| Graphics Card | 8MB ATI RAGE Mobility 128              | 8MB ATI RAGE Mobility 128              |
| FireWire      | 1 Port                                 | 1 Port                                 |
| Video Ports   | VGA/S-video                            | VGA/S-video                            |
| Ethernet      | 10/100                                 | 10/100                                 |
| Cache         | 1MB L2                                 | 1MB L2                                 |
| <b>ONLY</b>   | <b>\$2594<sup>98</sup><br/>#130731</b> | <b>\$3494<sup>98</sup><br/>#130730</b> |

\*A \$30 professional installation fee applies to all FREE memory promotions. It may take up to one business day to process the installation. Offer good while supplies last. Restrictions may apply.

\*\*Mac OS X available via mail-in redemption from Apple. Offer good through 8/21/01.

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Titanium PowerBook G4

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The first computer line with an affordable, start-to-finish DVD recording system, the Power Mac G4 is the computer of choice for creative professionals – such as graphic designers, Web developers, musicians and now DVD authors.

| G4 Processor  | <b>466MHz</b>                          | <b>533MHz</b>                          | <b>Dual 533MHz</b>                     | <b>733MHz</b>                          | <b>733MHz</b>                          |
|---------------|--|--|--|--|--|
| Hard Drive    | 30GB                                   | 40GB                                   | 40GB                                   | 60GB                                   | 60GB                                   |
| RAM           | 128MB                                  | 128MB                                  | 128MB                                  | 256MB                                  | 256MB                                  |
| Optical Drive | CD-RW                                  | CD-RW                                  | CD-RW                                  | CD-RW                                  | SuperDrive CD-RW/DVD-R                 |
| Graphics Card | ATI RAGE Pro128/16MB                   | NVIDIA GeForce2 MX/32MB                | NVIDIA GeForce2 MX/32MB                | NVIDIA GeForce2 MX/32MB                | NVIDIA GeForce2 MX/32MB                |
| FireWire/USB  | 2 Ports each                           | 2 Ports each                           | 2 Ports each                           | 2 Ports each                           | 2 Ports each                           |
| Ethernet      | Gigabit                                | Gigabit                                | Gigabit                                | Gigabit                                | Gigabit                                |
| Cache         | 1MB L2                                 | 1MB L2                                 | 1MB L2                                 | 256k L2 1MB L3                         | 256k L2 1MB L3                         |
| <b>ONLY</b>   | <b>\$1694<sup>98</sup><br/>#130736</b> | <b>\$2194<sup>98</sup><br/>#130735</b> | <b>\$2494<sup>98</sup><br/>#130798</b> | <b>\$2994<sup>98</sup><br/>#130732</b> | <b>\$3494<sup>98</sup><br/>#130733</b> |



AppleCare Protection Plan

Power Mac G4 #722601

**\$249<sup>99</sup>**



Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Zones, Inc. are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, Zones makes no representation or warranty with respect to Y2K compliance of product sold. ©2001 Zones, Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh and PowerBook are registered trademarks of the Apple Computer, Inc.



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With similar size-slimming style cues from the Titanium PowerBook G4, the new iBook's eye-catching, total redesign is very outwardly apparent. At only 4.9 pounds and measuring just 1.3" thin, it's small enough – and powerful enough – to fit any mobile lifestyle. And now you also get a 500MHz G3 processor and your choice of optical drives – a CD-ROM drive, DVD-ROM or combo CD-RW/DVD-ROM drive.

\*A \$30 professional installation fee applies to all FREE memory promotions. It may take up to one business day to process the installation. Offer good while supplies last. Restrictions may apply.  
\*\*Mac OS X available via mail-in redemption from Apple. Offer good through 8/21/01.

**Starting At Only \$1294<sup>98</sup>**

| G3 Processor  | 500MHz                                | 500MHz                                | 500MHz                                |
|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Hard Drive    | 10GB                                  | 10GB                                  | 10GB                                  |
| RAM           | 64MB                                  | 128MB                                 | 128MB                                 |
| On-chip Cache | 256K                                  | 256K                                  | 256K                                  |
| Optical Drive | CD                                    | DVD                                   | CD-RW/DVD                             |
| FireWire/USB  | 1/2                                   | 1/2                                   | 1/2                                   |
| AirPort Ready | Yes                                   | Yes                                   | Yes                                   |
| Ethernet      | 10/100BT                              | 10/100BT                              | 10/100BT                              |
| Modem         | 56K                                   | 56K                                   | 56K                                   |
| iMovie 2      | Yes                                   | Yes                                   | Yes                                   |
| iTunes        | Yes                                   | Yes                                   | Yes                                   |
| <b>ONLY</b>   | <b>\$1294<sup>98</sup></b><br>#130737 | <b>\$1494<sup>98</sup></b><br>#130738 | <b>\$1794<sup>98</sup></b><br>#139207 |



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Apple® iMac™

iMacs owe such popularity to much more than their beautiful, colorful cases. Maybe it's because of the iMacs' now legendary ease-of-use, low cost, versatility, compact size and so on. Maybe it's because iMacs let people do what they want to do, and some things they didn't ever dream they could do – like burning their own CDs and sending family videos over standard telephone lines. Or maybe it's just because the iMac is the best, most truly personal computer ever made, period. Whatever the reasons, ten million people can't be wrong. Order your iMac(s) today!

| Processor     | 400MHz                                      | 500MHz   | 600MHz   |
|---------------|---|--|--|
| Hard Drive    | 10GB  | 20GB   | 40GB   |
| RAM           | 64MB  | 64MB   | 128MB  |
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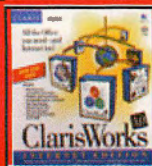
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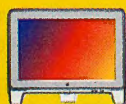


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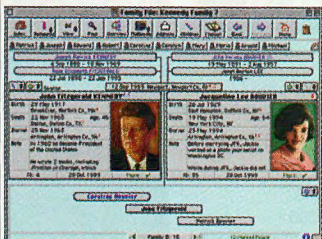
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# how not to

This time, we bring you a page of MacLoony.



## Troubleshoot a PCI Card

by the MacAddict Staff

### WHAT YOU'LL NEED

- A PCI card that doesn't work
- A no. 2 Phillips screwdriver
- Peanut butter (a chunky variety, preferably unsweetened)
- Alligator clips
- Wire (ideally about 22 gauge)
- Backhoe



PHOTOGRAPHY BY W. B. JONES

There are several downsides to the "smash card into DIMM slot" method.



We were drunk when we wrote this one.



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Nothing is more disappointing than a PCI card that doesn't work. There you are, ready to start using your new graphics card, video-capture system, or TV card, when suddenly all heck breaks loose. Flames pour out of your computer, melting the plastic, then the fire department arrives and your cat goes into hiding under an assumed name. What do you do?

### 1 Check the Power

Like any electronic device, PCI cards won't function if they don't get power. First, see if your PCI card simply isn't powering up.

If your card has any LEDs (light-emitting diodes, or annoying little blinking lights) that light up when you turn on your computer, then your card is certainly receiving power, so you can skip to the next step. Otherwise, you'll have to check for power at the card edge.

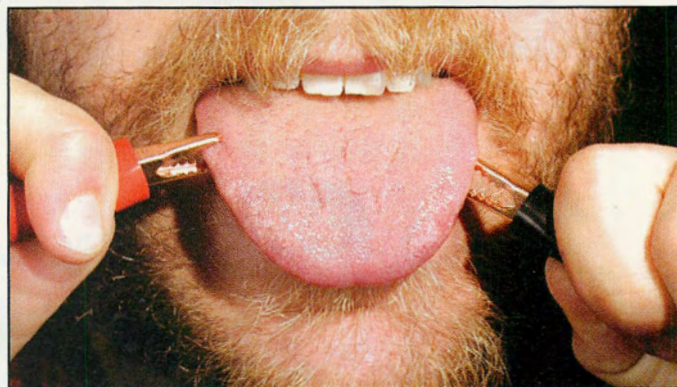
Fortunately, the human tongue can easily detect currents—when a current passes across your tongue, you'll detect an odd, metallic taste. Insert two fairly high-gauge wires into the alligator clips, then attach a clip to each side of your tongue. If you examine your motherboard, you'll see that Apple has labeled one side of the PCI slot "A" and the other side "B," and has also provided numeric labels. Touch one of the wires to pin B94 (that is, pin 94 on the side labeled "B"); this is a ground. Touch the other wire to a voltage-supplying pin to taste a current. Try the pins shown in the chart below.

If you find connecting alligator clips to your tongue slightly painful, you can use small pads of steel wool (Lazardo pads) to keep the prongs of the clips from biting into you. Because steel conducts electricity, the pads don't affect the taste much.

| PIN               | VOLTAGE | TASTE           |
|-------------------|---------|-----------------|
| B1                | G3/500  | Extremely nasty |
| A2                | +12.0V  | Extremely nasty |
| A5, B5, B6        | +5.0V   | Somewhat nasty  |
| A21, B25, A27     | +3.3V   | Slightly nasty  |
| B31, A33, B36     | +3.3V   | Slightly nasty  |
| A39, B41, B43     | +3.3V   | Slightly nasty  |
| A45, A53, B54     | +3.3V   | Slightly nasty  |
| A6, A62, B61, B62 | +5.0V   | Somewhat nasty  |

While troubleshooting PCI-card problems isn't easy, it's not impossible. We'll take you through the process of discovering why your card misbehaves.

If you don't have a malfunctioning card, you can usually convert a perfectly good PCI card into one by desoldering its components at random until it stops working.



You can adjust the distance between the clips—if arcs of electricity develop, move them further apart.

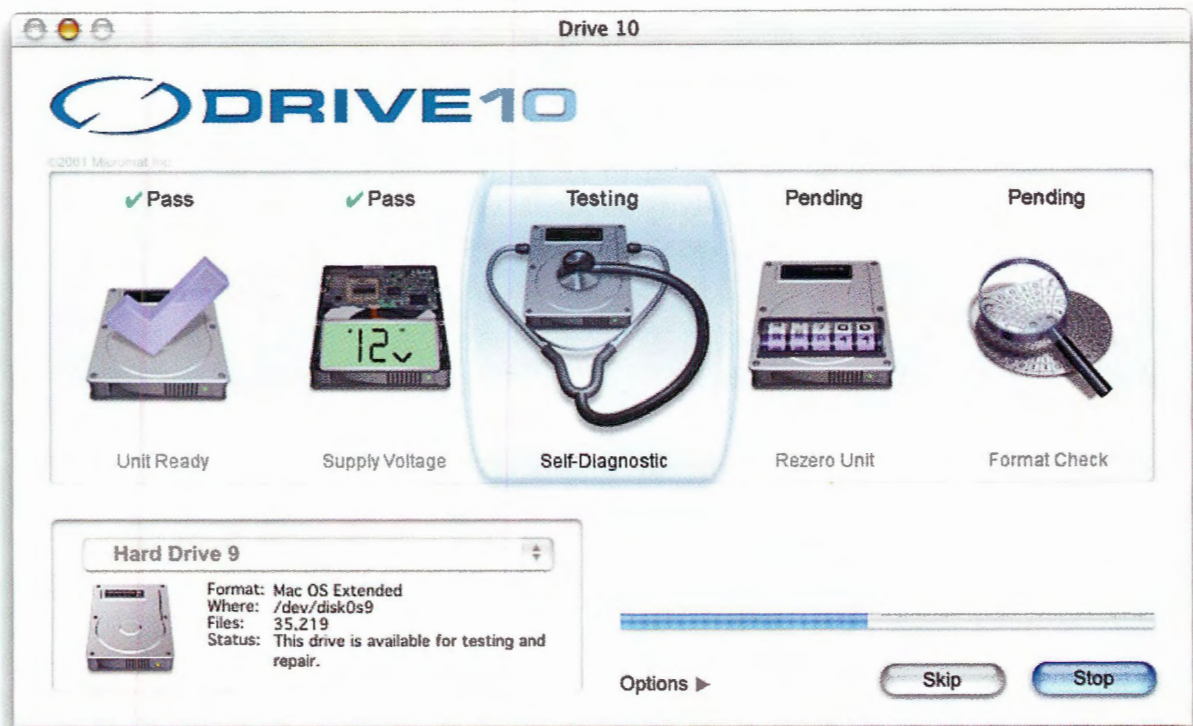
### Comic!

We almost always have sidebars in *How To* articles, which saves us from trying to link PCI cards to *The Joy of Tech*. That's a good thing—we can't remember the last PCI-related comic we saw.





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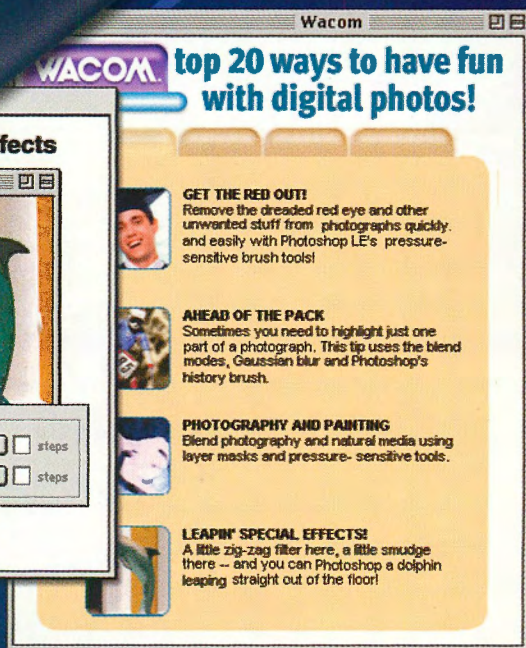
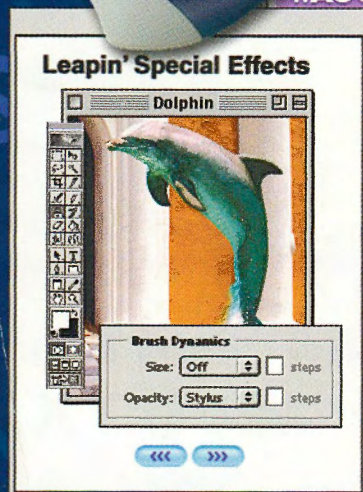
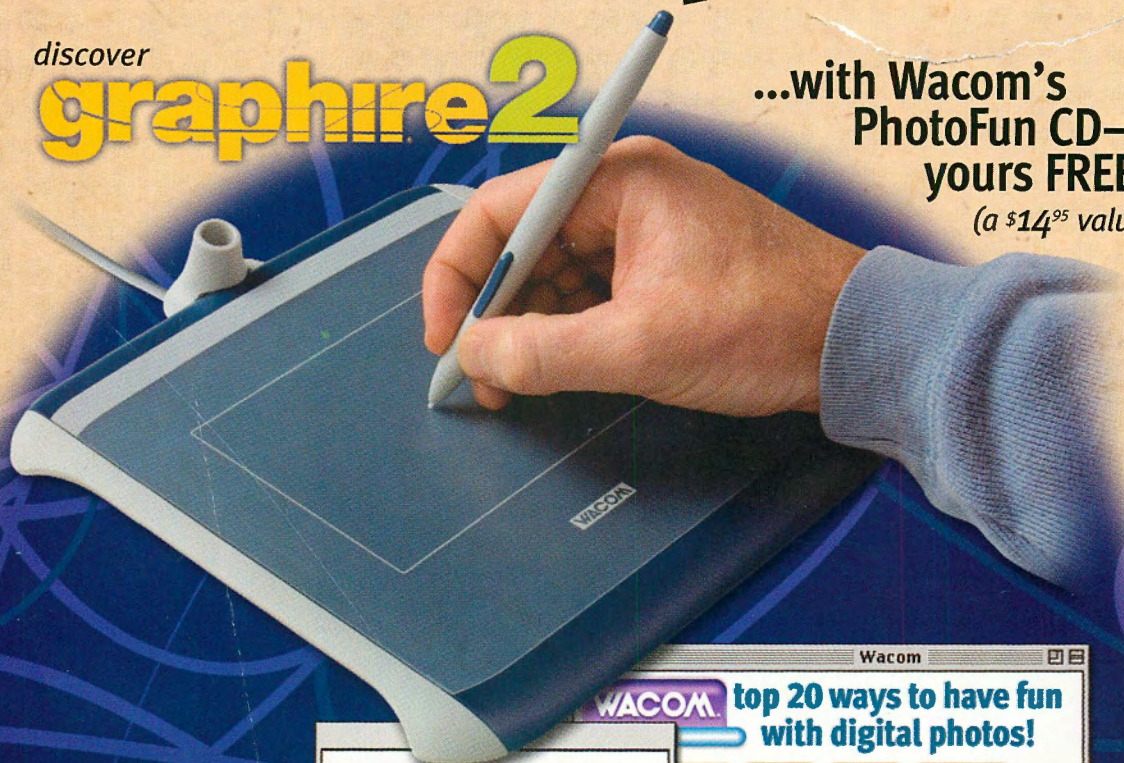
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